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## THE BOISSEVAIN REGION OF MANITOBA

Economics Branch, Canada Department of Agriculture

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Preface

This report is the second in a series of Prairie Regional Studies in Economic Geography; the first being a report on the Riverhurst Region of Saskatchewan that was prepared jointly by the Geographical Branch of the Department of Energy, Mines and Resources and the Economics Branch of the Canada Department of Agriculture.

The dissolution of the Geographical Branch early in 1967 and the transfer of the project wholly to the Canada Department of Agriculture has delayed this and subsequent publications in the series.

Wherever possible data for the whole region is presented, but the emphasis is on grain farms and the communities and facilities serving them. What is reported is a collection of facts and detailed tabular material describing the socio-economic activity of the region, from which the reader may gain an appreciation of the relative importance of the communities and farms situated there.

Our particular method of ranking communities is not perfect; for instance, it ignores dollar-volume of retail sales in each community and it does not weight the kind of service activity present. Such refinements should be attempted by other workers with other purposes. We hope that a useful purpose has been served in that, when tabulated by communities according to the number of services present, the pertinent data assumes a pattern that provides an insight into the viability of the communities.

It will be noted that we have refrained from drawing inferences, arriving at conclusions and making recommendations. Again, it is hoped that other workers will do so. We have been content to provide some of the parameters, bearing in mind the very significant changes that have been underway for several years especially in the grain production, collection and distribution system. The reader will find that simultaneous examination of two or more tables in this report will frequently yield some interesting relationships which will suggest new avenues of investigation.

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PRAIRIE REGIONAL STUDIES IN ECONOMIC GEOGRAPHY

Study No. 2 - The Boissevain Grain Growing Region of  
South-Western Manitoba

The "Boissevain Grain-Growing Regions of South-western Manitoba" comprises the areas, or hinterlands, served by about 30 grain delivery points (Figure 1). Wherever possible throughout the report the data are tabulated by grain delivery points and these are listed in ascending order of ranking of the community. (See Appendix I for a listing of communities and their service activities.)

### Classification of Communities

For the purpose of this study, the method of community classification is based on a modification of the system devised by the Saskatchewan Royal Commission on Agriculture and Rural Life (1957). The criterion for classification is the number of service activities present in the various communities studied. "Too small to classify" refers, primarily, to former grain delivery points or to existing delivery points where a single elevator is the only service activity present. If there are from 2 to 8 service activities, that community is classified as a hamlet; if from 9 to 32 service activities, it is a village and if from 33 to 59 it is a town. Greater towns have 60 or more service activities (Table 1).

In 1968, there were no service activities at the former delivery points of Argue, Orthez and Cameron. Croll, Dalny and Leighton were delivery points only, with one elevator each. These six centres comprise the "too small to classify" category. Of the eight hamlets in the study area, Cranmer, Elva, and Hathaway were the smallest with two service activities each. Regent, with eight services present was the largest. The remaining hamlets are: Underhill with three services; Broomhill, four services; Dand, six services and Coulter, seven services. In September 1967, the elevators at Elva were closed, leaving only the post office and the primary school. The elevator at Underhill was closed in 1966. There are nine villages in the study area, Fairfax and Medora being the smallest with eleven service activities each. The two largest villages are Minto and Elgin with 28 and 30 service activities respectively. Both these communities are on the Hartney Subdivision of the CNR. The five remaining villages are Lyleton with fifteen services; Goodlands and Lauder, nineteen services each; Tilston, twenty-one services and Napinka, twenty-three services. Pierson and Waskada are the two towns in the area with thirty-five and forty services activities respectively. Of the four greater towns in the area, Boissevain is the largest with around 150 service activities. The others are Melita, with 138 service activities, Deloraine with 108, and Hartney, with 73 service activities.



TABLE 1. - CLASSIFICATION OF COMMUNITIES IN THE STUDY AREA.

Too Small to Classify 0-1 Services	Hamlets 2-8 Services	Villages 9-32 Services	Towns 33-59 Services	Greater Towns 60 or more Services
Argue	Cranmer	Fairfax	Pierson	Hartney
Cameron	Elva	Medora	Waskada	Deloraine
Croll	Hathaway	Lyleton		Melita
Dalny	Underhill	Goodlands		Boissevain
Leighton	Broomhill	Lauder		
Orthez	Dand	Tilston		
	Coulter	Napinka		
	Regent	Minto		
		Elgin		

TABLE 2. - FARM POPULATION IN THE STUDY AREA, BY RURAL MUNICIPALITY, CENSUS YEARS, 1941 to 1966

Rural Municipality	1941	1951	1956	1961	1966
Albert	1,111	1,018	953	802	741
Arthur	1,209	1,156	1,084	1,004	869
Brenda	1,479	1,296	1,236	1,166	1,043
Cameron	1,224	1,082	1,005	866	846
Edward	1,007	882	841	813	787
Glenwood	1,081	953	873	821	923
Morton	1,901	1,724	1,658	1,455	1,351
Sifton	1,078	960	900	835	873
Whitewater	1,007	882	827	774	780
Winchester	1,560	1,317	1,271	1,179	1,083

Source: Dominion Bureau of Statistics, Ottawa.

## Farm Population

Census Division No. 4 covers nearly all of the study area's 2,500 square miles, facilitating the use of census population data to help in describing the demography of the area. The Rural Municipalities included are: Albert, Arthur, Brenda, Cameron, Edward, Morton, Whitewater and Winchester, together with Glenwood and Sifton in Census Division No. 8. The area being examined includes only part of these latter two rural municipalities (Table 2).

Since World War II the province of Manitoba has witnessed a trend towards urbanization. Between 1941 and 1966 the number of people living on farms in Manitoba decreased by 36 per cent - from 249,599 to 159,872. This resulted in a decline in the proportion of Manitobans living on farms - from 34 per cent to 17 per cent. Such a decrease reflects the increase in non-farm job opportunities with a consequent migration from farm to town.

Within the Boissevain study area, the farm population in Census Division No. 4 decreased only about 29 per cent - from 10,500 in 1941 to 7,500 in 1966. The proportion of the total population living on farms remains substantially above the provincial average, declining only moderately from about two-thirds to slightly more than one-half. At the same time, six of the ten rural municipalities making up the study area experienced decreases in farm population of about 30 per cent during the quarter century following the 1941 census. These are as follows: Albert, Arthur, Brenda, Cameron, Morton and Winchester. The rural municipalities of Edward, in the extreme south west corner of the study area, and Whitewater, in the north east corner, both recorded farm population decreases of slightly more than 20 per cent. The two rural municipalities to the north, Glenwood and Sifton, had decreases of 15 and 19 per cent respectively during this period.

In order to better understand the study area, a list of the rural municipalities involved and the communities included in each is provided below:

### Rural Municipality

### Grain Delivery Point

Albert	Tilston and Broomhill
Arthur	Melita, Elva, Cameron, Coulter and Dalny
Brenda	Napinka, Medora, Leighton, Waskada, Cranmer and Goodlands
Cameron	Hartney, Underhill, Argue and Lauder
Edward	Pierson and Lyleton
Morton	Croll, Orthez and Boissevain
Whitewater	Elgin, Fairfax and Minto
Winchester	Dand, Regent, Deloraine and Hathaway

## Population of Communities

While the population of the Province of Manitoba increased close to 60 per cent between 1921 and 1966, the total population of Census Division No. 4 declined by a fifth. The population living in the 29 communities included in the study area was stable between 1921 and 1941 at around 4,600 people. It has increased steadily since then to 5,800 people, which is 26 per cent above the 1921 population (Table 3).

The increase was not general in all communities. Rather it was another illustration of a familiar story in which the large towns grew larger and the small points became smaller. In the group of hamlets the declines range from a 36 per cent drop at Regent to 79 per cent at Underhill. The four hamlets on the CPR Boissevain subdivision (Regent, Dand, Hathaway and Croll) have all experienced large declines over the past 25 years. The hamlet of Elva has lost more than half its population since 1921. It may have suffered as a result of its close proximity to Pierson and Melita. Between 1921 and 1966 the population of Pierson increased by half. The most significant increase in population of any community in the study area, however, occurred at Melita where between 1941 and 1966 the population rose by 86 per cent.

Of some interest is the lack of growth of the two railway junction communities of Lauder and Napinka. Lauder had a population of 125 in 1921 but only 56 today. The population of Napinka declined from 299 to 191 in the same period. It is possible that the triangle of greater towns - Hartney, Melita and Deloraine - is exerting a centralizing pressure on these two villages and on other communities in close proximity.

The population of the town of Pierson increased steadily over the years. This is in sharp contrast to the population of the only other town in the study area, Waskada. The population at Waskada fluctuated greatly but its present population is the same as it was 25 years ago.

The dominant growth centres in the study area are the greater towns of Hartney, Deloraine, Melita and Boissevain. All have increased steadily during the past quarter century.



TABLE 3. - POPULATION OF COMMUNITIES IN THE STUDY AREA, CENSUS YEARS 1921 to 1966

	1921	1941	1951	1956	1961	1966
Argue	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cameron	n.a.	4	n.a.	n.a.	n.a.	n.a.
Croll	n.a.	4	5	14	6	5
Dalny	n.a.	4	n.a.	n.a.	4	n.a.
Leighton	n.a.	1	4	6	n.a.	n.a.
Orthez	n.a.	n.a.	14	23	n.a.	n.a.
Cranmer	n.a.	5	n.a.	n.a.	n.a.	n.a.
Elva	87	59	53	44	58	41
Hathaway	n.a.	5	n.a.	n.a.	n.a.	2
Underhill	n.a.	19	6	11	12	4
Broomhill	41	24	24	17	16	9
Dand	n.a.	24	23	34	15	12
Coulter	n.a.	34	39	26	24	18
Regent	n.a.	25	20	20	19	16
Fairfax	59	48	49	45	41	37
Medora	n.a.	91	115	98	90	90
Lyleton	108	113	123	127	123	87
Goodlands	66	120	168	152	138	115
Lauder	125	117	111	91	72	56
Tilston	84	127	146	129	101	93
Napinka	299	255	222	181	178	191
Minto	199	164	171	176	171	135
Elgin	361	271	338	305	259	301
Pierson	145	165	194	221	229	221
Waskada	286	282	395	357	297	282
Hartney	576	478	538	554	592	621
Deloraine	685	773	874	900	916	910
Melita	676	591	781	926	1038	1101
Boissevain	825	817	1015	1115	1303	1473
Totals	4622	4620	5428	5572	5702	5820
Census Division 4	17241	15699	15036	14630	14217	13743
Province of Manitoba	610118	729744	776541	850040	921686	963066

n.a.: not available

Source: Dominion Bureau of Statistics, Ottawa.

## Community Populations, by Age and Sex

Tables 4(a) and 4(b) contain data derived from the 1966 census for six of the communities and eight rural municipalities within the study area. Table 4(a) breaks the information down into 10 year age groups, with a further male-female classification within each group. Table 4(b) is designed to demonstrate the proportions of the people falling within three general age groups.

On the farms men outnumber women whereas, at least in the greater towns included in the study area, the opposite holds. There are more teen-aged boys than girls both in the rural population and in the villages and towns. In the under 10 years of age group, there is no significant difference between the number of boys and the number of girls.

The age group that most closely approximates the effective working population is of course the 20 to 69 years of age group. In the province of Manitoba this group comprises 52.7 per cent of the total population. The study community that comes closest to this proportion is Hartney, where 52.3 per cent of the population is in this category. Napinka, with 45.1 per cent in this group, is below the provincial average and the study area proportion of 52.3 per cent. The study area compares very closely with the norm for the province as far as this group is concerned.

People in the retired age group make up a larger proportion of those living in towns than on farms - about 13 per cent versus about 4 per cent. This group, dwelling in the study communities, is well above the provincial norm of 6.3 per cent. The farm population in seven of the eight rural municipalities located within the study area falls short of the provincial proportion in this age group. This would seem to indicate that older people move off the farms and into adjacent communities. The presence of at least two homes for senior citizens in the larger centres would tend to bear this out.

While the proportion of people under 20 years of age in the whole study area (40.1 per cent) is not too different from that in the whole province (41.0 per cent), this group is under-represented in the six communities for which census information is available (33 per cent). The reverse is true in the rural municipalities (43 per cent). The towns have a relatively small school age group whereas most of the rural municipalities exceed the norm.

TABLE 4A. — POPULATION BY TEN-YEAR AGE GROUPS AND SEX, BY RURAL MUNICIPALITY AND INCORPORATED TOWNS AND VILLAGES IN THE STUDY AREA, 1966

		years										90 and Over
		Total	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	
Napinka	T	191	31	38	10	11	19	28	18	25	11	—
	M	100	15	22	5	6	7	16	9	13	7	—
	F	91	16	16	5	5	12	12	9	12	4	—
Waskada	T	282	48	47	31	21	35	47	23	23	6	1
	M	134	24	24	16	12	15	24	10	7	1	1
	F	148	24	23	15	9	20	23	13	16	5	—
Hartney	T	621	92	123	65	62	59	76	63	61	18	2
	M	297	40	67	32	33	26	38	26	29	6	—
	F	324	52	56	33	29	33	38	37	32	12	2
Deloraine	T	910	114	160	79	73	103	125	122	91	39	4
	M	451	57	91	38	37	49	58	60	42	18	1
	F	459	57	69	41	36	54	67	62	49	21	3
Melita	T	1,101	180	199	119	98	126	165	104	78	30	2
	M	549	91	107	61	50	54	84	48	36	16	2
	F	552	89	92	58	48	72	81	56	42	14	—
Boissevain	T	1,473	247	230	161	129	126	159	185	175	56	5
	M	724	124	122	81	62	62	61	97	88	24	3
	F	749	123	108	80	67	64	98	88	87	32	2
RURAL MUNICIPALITIES												
Albert	T	878	181	192	96	99	111	107	54	30	8	—
	M	481	84	106	56	50	66	65	33	18	3	—
	F	397	97	86	40	49	45	42	21	12	5	—
Arthur (Excluding Melita)	T	1,015	219	215	138	104	127	112	71	22	6	1
	M	571	122	116	87	52	64	70	41	15	3	1
	F	444	97	99	51	52	63	42	30	7	3	—



TABLE 4A. — POPULATION BY TEN-YEAR AGE GROUPS AND SEX, BY RURAL MUNICIPALITY AND INCORPORATED TOWNS AND VILLAGES IN THE STUDY AREA, 1966 (continued)

		years										90 and Over
		Total	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	
Brenda (Excluding Napinka and Waskada)	T	1,280	255	292	143	140	162	148	77	42	17	4
	M	688	124	158	77	78	80	90	39	28	13	1
	F	592	131	134	66	62	82	58	38	14	4	3
Cameron (Excluding Hartney)	T	941	182	197	89	99	128	117	76	36	16	1
	M	522	92	118	49	52	66	73	44	19	9	—
	F	419	90	79	40	47	62	44	32	17	7	1
Edward	T	1,144	243	244	99	122	130	123	98	69	14	2
	M	597	121	115	55	71	62	77	49	42	4	1
	F	547	122	129	44	51	68	46	49	27	10	1
Morton (Excluding Boissevain)	T	1,440	355	348	139	174	175	138	85	17	9	—
	M	786	182	195	75	94	86	75	65	10	4	—
	F	654	173	153	64	80	89	63	20	7	5	—
Whitewater	T	1,184	264	221	112	144	127	146	104	50	16	—
	M	635	136	132	58	80	58	76	62	26	7	—
	F	549	128	89	54	64	69	70	42	24	9	—
Winchester (Excluding Deloraine)	T	1,283	307	291	134	156	178	111	59	33	14	—
	M	692	159	152	66	86	99	63	35	24	8	—
	F	591	148	139	68	70	79	48	24	9	6	—
Total of Study Area	T	13,743	2,718	2,797	1,415	1,432	1,606	1,602	1,139	752	260	22
	M	7,227	1,371	1,525	756	763	794	870	618	397	123	10
	F	6,516	1,347	1,272	659	669	812	732	521	355	137	12

Source: Dominion Bureau of Statistics, Ottawa.

T Total  
M Male  
F Female

TABLE 4B. - PROPORTION OF POPULATION FALLING WITHIN THREE SPECIFIED AGE GROUPS, 1966

	Pre-School & School Age Group (0 to 19 years)	Working Age Group (20 to 69)	Retired Age Group (70 and over)
- per cent -			
<i>Communities</i>			
Napinka	36.1	45.1	18.8
Waskada	33.7	55.7	10.6
Hartney	34.6	52.3	13.1
Deloraine	30.1	55.2	14.7
Melita	34.4	55.6	10.0
Boissevain	32.4	51.6	16.0
<i>Rural Municipalities</i>			
Albert	42.5	53.2	4.3
Arthur (excl. Melita)	42.8	54.4	2.8
Brenda (excl. Napinka and Waskada)	42.7	52.3	4.9
Cameron (excl. Hartney)	40.3	54.0	5.7
Edward	42.6	50.0	7.4
Morton (excl. Boissevain)	48.8	49.4	1.8
Whitewater	41.0	53.5	5.5
Winchester (excl. Deloraine)	46.6	49.7	3.7
Whole Study Area	40.1	52.3	7.6
Province of Manitoba	41.0	52.7	6.3

TABLE 5. - ENROLMENT IN SCHOOLS IN THE STUDY AREA, BY GRADES, SCHOOL YEAR 1967-68

	Total	1	2	3	4	5	6	7	8	9	10	11	12
Elva	46	6	7	3	7	8	4	4	7				
Dand	34	2	-	7	6	3	4	5	7				
Coulter	11	2	-	3	1	2	2	-	1				
Medora	69	8	8	7	7	10	9	14	6				
Lyleton	43	6	3	9	5	3	6	6	5				
Goodlands	41	7	5	4	8	3	7	2	5				
Lauder	32	3	5	5	4	2	5	4	4				
Tilston	86	7	11	9	10	13	10	15	11				
Napinka	81	12	9	9	5	18	6	11	11				
Minto	79	17	10	11	6	8	8	16	3				
Elgin	106	18	10	13	14	19	10	14	8				
Pierson	211	13	12	17	14	20	9	16	20	43	25	11	11
Waskada	230	17	12	13	15	17	15	20	14	26	28	34	19
Hartney	406	26	28	27	34	31	27	28	35	39	45	39	47
Deloraine	609	46	45	46	43	62	43	55	46	68	65	46	44
Melita	447	37	34	33	35	37	36	33	22	43	50	52	35
Boissevain	721	59	61	58	57	57	55	58	59	92	60	57	48

The following schools have been dissolved

Argue, Jan. 1, 1965; Croll, Jan. 1, 1959; Dalny, Jan. 1, 1966; Hathaway, July 1, 1959; Broomhill, Jan. 1, 1967 (now with Division 41, Reston); Regent, Jan. 1, 1967 (now with Deloraine); and Fairfax, Jan. 1, 1966.

## School Enrolment

Until fairly recently, both primary and secondary education in the province of Manitoba was dominated by a plethora of small independent school boards. At one time school trustees outnumbered teachers by a margin of three to one. While some improvements had been made over the years, it was not until after the general high school referendum of 1958 that school consolidation gained any appreciable momentum. As a direct result of the referendum, increased efficiency of administration was encouraged through the formation of larger school districts. At the same time an attempt was made to close all high schools containing fewer than twelve rooms. Greater emphasis was placed on the construction of new schools and the improvement of facilities in general.

At the primary school level, the emphasis has been on closing schools having fewer than eight rooms. Over the last few years about 60 schools in the study area have been closed. Closing of the smaller schools, especially the numerous one and two room schools in the country, has been offset by increased bussing of children to schools in the larger communities. The results of primary school referenda of 1967 and 1968 suggest that this present trend towards school consolidation is expected to continue for at least another five years.

This general trend is apparent in the study area where the only high schools are in the towns and greater towns (Table 5). During the school year 1967-68, two-thirds or 2,183 of the areas total school enrolment of 3,252 was registered in the greater towns of Hartney, Deloraine, Melita and Boissevain. With the addition of students in the towns of Pierson and Waskada, this figure rises to 80 per cent with 2,624 students enrolled in the six largest centres.

## Post Office Revenues

Post office revenues give an indication of the degree of socio-economic activity present in a community and its hinterland. During the past ten years post offices operated in 21 of the 28 communities. In the fall of 1964 those at Croll and Broomhill were closed, and the post office at Regent closed in 1968.

While there were more increases than decreases in revenue among the 21 offices, the biggest increases tended to occur at the biggest centres (Boissevain 60 per cent, Melita 68 per cent, Hartney 45 per cent), although on a percentage basis some of the smaller centres showed substantial increases (Fairfax 53 per cent, Medora 58 per cent). Only two of nine post offices located in villages showed decreased revenues. These were Lyleton and Lauder, which declined 9 per cent and 18 per cent respectively in 1966-67 compared with 1957-58 (Table 6).

The two towns in the study area, Pierson and Waskada, each experienced an increase in post office revenue - 50 per cent and 20 per cent respectively each reaching almost \$4,000 in 1966-67.

In the greater towns the dollar volume of post office revenue is several times that in the villages and hamlets. In 1966-67 Boissevain postal revenue totaled \$20,954; Melita \$16,900; Deloraine \$13,558, and Hartney \$8,386.

TABLE 6. - POST OFFICE REVENUE IN THE STUDY AREA, FISCAL YEARS 1957-58 TO 1966-67

	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67
	dollars									
Croll	108	97	91	107	103	91	88	43	closed	
Broomhill	258	232	246	275	260	246	239	144	closed	
Elva	500	404	379	380	348	276	303	381	381	394
Dand	383	373	386	617	492	420	443	432	504	483
Coulter	429	413	397	373	408	433	458	492	515	519
Regent	366	336	329	317	304	312	329	326	311	298
Fairfax	699	738	707	695	643	709	771	896	1,031	1,071
Medora	1,318	1,437	1,517	1,495	1,576	1,619	1,641	1,835	1,844	2,088
Lyleton	1,213	1,105	1,063	1,033	1,148	1,134	1,160	1,155	1,058	1,104
Goodlands	1,163	1,293	1,256	1,244	1,368	1,427	1,377	1,442	1,454	1,413
Lauder	1,122	995	862	835	912	930	870	1,020	981	916
Tilston	1,118	1,183	1,121	1,111	1,176	1,170	1,169	1,353	1,297	1,312
Napinka	1,672	1,553	1,604	1,565	1,559	1,553	1,500	1,693	1,721	1,722
Minto	1,944	2,041	2,064	2,219	2,237	2,110	2,162	2,317	2,315	2,285
Elgin	2,671	2,644	2,569	2,572	2,613	2,686	2,692	2,789	2,935	3,158
Pierson	2,606	2,598	2,636	2,558	2,686	2,822	3,113	3,584	3,772	3,833
Waskada	3,270	3,228	3,228	3,196	3,267	3,418	3,454	3,833	3,759	3,928
Hartney	5,763	5,773	5,746	5,854	6,331	6,618	6,772	7,837	8,341	8,386
Deloraine	9,928	9,798	9,636	9,849	10,229	10,344	10,937	12,808	12,857	13,558
Melita	10,076	10,379	11,060	11,084	12,169	12,869	13,136	15,130	16,277	16,990
Boissevain	13,058	13,557	14,024	14,161	15,240	15,726	16,039	18,040	19,314	20,954

Source: Post Office Department, Ottawa.



### Property Tax Assessment

Property tax assessment data are available for the six incorporated towns and villages in the area as well as for eight rural municipalities. Railway associated assessment expressed as a percentage of total assessment is shown at the bottom of Table 7. On the basis of the six communities for which information is available, it is apparent that this percentage declines as the size of the community increases. In the smallest community represented, the village of Napinka, railway related assessment represents 31 per cent of total assessment. In the town of Waskada it is 19 per cent, and in the greater towns of the area it ranges from 17.7 per cent at Hartney to 9 per cent at Melita. At Boissevain it is 10 per cent. The larger figure at Hartney appears to be due, in part, to the fact that both railroads have property in the town.

Railway tax assessment forms a much smaller part of total assessment in the rural municipalities (exclusive of the villages and towns for which data are tabulated separately). The rural municipality of Morton in the south east corner of the study area has the smallest proportion of the eight rural municipalities with 1.6 per cent. The two rural municipalities with the largest proportions are Whitewater in the north east corner of the study area and Edward in the south west corner with 5.2 and 5.6 per cent respectively. As one might expect, the predominant factor in the tax base of the rural municipalities is farm land assessment.

### Carload Rail Traffic

The volume of rail traffic (Table 8) generated is another indicator of economic activity. At some points the level has declined to the point where shipment by rail has been terminated. At Orthez, rail shipments stopped in 1962 and have not resumed. While rail traffic at Argue and Cameron has not been terminated completely it is at best sporadic. Both these points have been closed as grain delivery points for several years. The only rail traffic in the past eight years has been outward bound grain by consigned cars and platform loadings. The remaining communities in the "too small to classify" category are Croll, Dalny and Leighton. While these communities have received some small inbound shipments, outbound grain remains the dominant traffic generator.

The picture in the hamlets is much the same. Grain continues to generate practically all of the outbound traffic, while fuel forms the largest part of the inbound traffic, although the volume is hardly worth of mention. Inbound shipments of fertilizer and manufactured goods have been sporadic.

The rail traffic pattern in most of the villages is very similar to that of the hamlets, the only differences as far as grain shipments are concerned is that they tend to be larger than those in the hamlets. This is due to the fact that the village centres service larger grain growing areas than do the hamlets. The village centres of Minto and Elgin, the two largest, are in many ways representative of the communities in this group. As with all the villages in the area, Minto and Elgin have experienced a continuing decline in the number and size of their inbound rail shipments.

This trend has also been accompanied by a steady decrease in the range and variety of those items comprising inbound shipments. This latter trend is particularly noticeable in the case of Minto and Elgin. Inbound shipments of fertilizer at both Minto and Elgin have remained a small but growing item. At Elgin inbound shipments of agricultural implements and chemicals continue to be important.

The two towns of the area (Pierson and Waskada) appear to be similar to the villages in many ways regarding rail shipments. Both have experienced a slow decline of inbound shipments over the years. Perhaps the only distinguishing feature of rail shipments in the towns is the slightly larger role played by manufactured goods in the inbound shipments. Both towns appear to be minor centres of distribution. However, they share a common characteristic with the other smaller communities in the area in that outbound shipments always predominate over inbound shipments.

In the greater towns of the area, shipments of grain generate virtually all of the outbound rail traffic, although in recent years, at Deloraine, Melita and Boissevain, manufactured products have formed some part of the outbound traffic. Manufactured goods tend to form the greater part of inbound deliveries. Inbound rail shipments, as a whole, into these towns, rather than showing any marked tendencies towards increase or decline, appear to be more influenced by the general state of local or national economies. However, there appears to be marked trends in the inbound shipments of manufactured goods. Deloraine and Melita have received larger inbound shipments of manufactured goods than have either Hartney or Boissevain in the most recent years. Deloraine and Melita both show considerable strength in this area and appear to have considerable potential as major distribution centres for the region.

Throughout the region inbound shipments of both mineral and forest products have been on the decline. Outbound shipments of these products are virtually nil.





TABLE 8. - REVENUE, CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-67

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Argue products of agriculture	-	21	-	37	-	17	-	21	n/a	n/a	-	25	-	22	-	11
Cameron products of agriculture	n/a	n/a	n/a	n/a	-	1	-	-	-	-	-	5	-	-	-	-
Croll products of agriculture	-	62	-	86	n/a	n/a	-	68	-	59	-	71	-	66	-	28
products of mines	4	-	3	-	n/a	n/a	-	-	-	-	-	-	-	-	-	-
manufactures and misc.	9	-	6	-	n/a	n/a	3	-	1	-	-	-	-	-	-	-
TOTAL	13	62	9	86	n/a	n/a	3	68	1	59	-	71	-	66	-	28
Dalny products of agriculture	n/a	n/a	n/a	n/a	-	119	-	118	-	160	-	120	-	199	-	68
manufactures and misc.	n/a	n/a	n/a	n/a	-	-	-	-	-	-	-	-	1	-	2	-
TOTAL	n/a	n/a	n/a	n/a	-	119	-	118	-	160	-	120	1	199	2	68
Leighton products of agriculture	n/a	n/a	n/a	n/a	-	67	n/a	n/a	-	100	-	115	-	121	-	69
products of mines	n/a	n/a	n/a	n/a	8	-	n/a	n/a	4	-	6	-	3	-	3	-
manufactures and misc.	n/a	n/a	n/a	n/a	-	3	n/a	n/a	2	-	-	-	-	-	1	-
TOTAL	n/a	n/a	n/a	n/a	8	70	n/a	n/a	6	100	6	115	3	121	4	69
Orthez products of agriculture	-	32	-	36	-	-	-	-	-	-	-	-	-	-	-	-
products of mines	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	2	32	-	36	-	-	-	-	-	-	-	-	-	-	-	-
Cranmer products of agriculture	-	78	-	73	-	76	-	77	-	96	-	86	-	90	-	43
products of mines	7	-	6	-	5	-	4	-	3	-	4	-	5	-	3	-
manufactures and misc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-
TOTAL	7	78	6	73	5	76	4	77	3	96	4	86	5	90	5	43

(continued)

TABLE 8. - REVENUE, CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-67 (continued)

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Elva																
products of agriculture	n/a	n/a	n/a	n/a	-	27	n/a	n/a	-	68	-	47	-	54	-	29
products of mines	n/a	n/a	n/a	n/a	1	-	n/a	n/a	-	-	-	-	-	-	-	-
manufactures and misc.	n/a	n/a	n/a	n/a	-	1	n/a	n/a	-	-	-	-	-	-	1	-
TOTAL	n/a	n/a	n/a	n/a	1	28	n/a	n/a	-	68	-	47	-	54	1	29
Hathaway																
products of agriculture	2	39	-	56	n/a	n/a	-	74	-	52	-	73	-	63	-	43
products of mines	4	-	5	-	n/a	n/a	4	-	2	-	2	-	2	-	1	-
manufactures and misc.	-	-	-	-	n/a	n/a	1	-	-	-	-	-	-	-	-	-
TOTAL	6	39	5	56	n/a	n/a	5	74	2	52	2	73	2	63	1	43
Underhill																
products of agriculture	-	44	-	30	-	20	-	46	n/a	n/a	-	29	-	22	-	16
products of mines	3	-	-	-	1	-	-	-	n/a	n/a	-	-	-	-	-	-
manufactures and misc.	1	-	-	-	-	-	-	-	n/a	n/a	-	-	-	-	1	-
TOTAL	4	44	-	30	1	20	-	46	n/a	n/a	-	29	-	22	1	16
Broomhill																
products of agriculture	n/a	n/a	-	38	-	37	-	73	-	67	-	66	-	59	-	43
manufactures and misc.	n/a	n/a	-	1	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	n/a	n/a	-	39	-	37	-	73	-	67	-	66	-	59	-	43
Dand																
products of agriculture	1	63	-	59	n/a	n/a	-	75	-	70	-	74	-	67	-	42
products of mines	1	-	1	-	n/a	n/a	-	-	1	-	1	-	-	-	-	-
TOTAL	2	63	1	59	n/a	n/a	-	75	1	70	1	74	-	67	-	42
Coulter																
products of agriculture	n/a	n/a	n/a	n/a	-	60	-	87	-	82	-	74	-	89	-	45
products of mines	n/a	n/a	n/a	n/a	-	-	2	-	-	-	-	-	-	-	-	-
manufactures and misc.	n/a	n/a	n/a	n/a	-	1	-	4	-	-	-	1	-	-	-	-
TOTAL	n/a	n/a	n/a	n/a	-	61	2	91	-	82	-	75	-	89	-	45

(continued)

TABLE 8. - REVENUE, CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-67 (continued)

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Regent																
products of agriculture	-	72	-	155	n/a	n/a	-	114	-	123	-	116	-	129	-	79
products of mines	10	-	8	-	n/a	n/a	2	-	3	-	2	-	-	-	-	-
manufactures and misc.	-	-	-	-	n/a	n/a	2	-	-	-	1	-	-	-	-	-
TOTAL	10	72	8	155	n/a	n/a	4	114	3	123	3	116	-	129	-	79
Fairfax																
products of agriculture	-	164	-	206	-	123	-	181	n/a	n/a	-	205	-	245	-	176
products of mines	1	-	-	-	-	-	-	-	n/a	n/a	-	-	-	-	-	-
products of forests	-	-	-	-	-	-	-	-	n/a	n/a	-	-	-	-	1	-
manufactures and misc.	2	1	2	-	3	-	4	-	n/a	n/a	1	-	10	-	1	2
TOTAL	3	165	2	206	3	123	4	181	n/a	n/a	1	205	10	245	2	178
Medora																
products of agriculture	n/a	n/a	n/a	n/a	-	209	n/a	n/a	1	302	-	318	-	428	-	215
products of mines	n/a	n/a	n/a	n/a	16	-	n/a	n/a	14	-	13	-	9	-	7	-
products of forests	n/a	n/a	n/a	n/a	1	-	n/a	n/a	-	-	-	-	-	-	-	-
manufactures and misc.	n/a	n/a	n/a	n/a	1	-	n/a	n/a	2	2	5	-	10	-	7	-
TOTAL	n/a	n/a	n/a	n/a	18	209	n/a	n/a	17	304	18	318	19	428	14	215
Lyleton																
products of agriculture	n/a	n/a	n/a	n/a	-	174	-	264	-	295	-	241	-	335	-	175
products of mines	n/a	n/a	n/a	n/a	32	-	26	-	28	-	29	-	26	-	33	-
products of forests	n/a	n/a	n/a	n/a	-	-	-	-	-	-	-	-	-	-	1	-
manufactures and misc.	n/a	n/a	n/a	n/a	-	-	1	-	2	-	3	-	3	-	4	-
TOTAL	n/a	n/a	n/a	n/a	32	174	27	264	30	295	32	241	29	335	38	175
Goodlands																
products of agriculture	-	162	1	156	-	209	-	235	-	283	-	225	-	363	-	160
products of mines	20	-	16	-	17	-	17	-	14	-	10	-	4	-	1	-
products of forests	7	-	2	-	3	-	2	-	4	-	2	-	1	-	3	-
manufactures and misc.	18	-	3	-	-	-	2	-	2	-	3	-	-	-	4	-
TOTAL	45	162	22	156	20	209	21	235	20	283	15	225	5	363	8	160

(continued)

TABLE 8. — REVENUE, CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-67 (continued)

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Lauder																
products of agriculture	n/a	n/a	n/a	n/a	—	113	n/a	n/a	—	104	—	118	—	116	—	54
products of mines	n/a	n/a	n/a	n/a	5	—	n/a	n/a	4	—	5	—	2	—	1	—
manufactures and misc.	n/a	n/a	n/a	n/a	—	—	n/a	n/a	—	—	—	—	—	—	1	—
TOTAL	n/a	n/a	n/a	n/a	5	113	n/a	n/a	4	104	5	118	2	116	2	54
Tilston																
products of agriculture	n/a	n/a	1	115	—	128	—	248	—	207	—	209	—	258	—	165
products of mines	n/a	n/a	3	—	6	—	4	—	2	—	5	—	5	—	3	—
manufactures and misc.	n/a	n/a	2	—	2	—	2	—	6	—	5	—	8	—	4	—
TOTAL	n/a	n/a	6	—	8	—	6	248	8	207	10	209	13	258	7	165
Napinka																
products of agriculture	n/a	n/a	n/a	n/a	1	77	n/a	n/a	—	119	—	86	—	155	—	54
products of mines	n/a	n/a	n/a	n/a	20	—	n/a	n/a	18	—	16	—	11	—	5	—
manufactures and misc.	n/a	n/a	n/a	n/a	6	—	n/a	n/a	3	1	2	—	—	—	—	—
TOTAL	n/a	n/a	n/a	n/a	27	77	n/a	n/a	21	120	18	86	11	155	5	54
Minto																
products of agriculture	3	186	8	268	—	146	—	217	n/a	n/a	—	232	—	291	—	157
products of mines	22	—	14	—	14	—	7	—	n/a	n/a	4	—	—	—	—	—
products of forests	9	—	3	—	2	—	—	—	n/a	n/a	—	—	1	—	2	—
manufactures and misc.	42	—	29	—	33	—	37	—	n/a	n/a	24	—	27	—	24	1
TOTAL	76	186	54	268	49	146	44	217	n/a	n/a	28	232	28	291	26	158
Elgin																
products of agriculture	15	213	—	232	—	159	1	224	n/a	n/a	—	276	—	331	—	192
products of mines	44	—	35	—	34	—	31	—	n/a	n/a	26	—	25	—	19	—
products of forests	7	—	4	—	6	—	6	—	n/a	n/a	3	—	3	—	4	—
manufactures and misc.	42	1	42	1	47	—	55	—	n/a	n/a	48	—	42	1	42	—
TOTAL	108	214	81	233	87	159	93	224	n/a	n/a	77	276	70	332	65	192

(continued)



TABLE 8. - REVENUE, CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-67 (continued)

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Pierson																
products of agriculture	n/a	n/a	n/a	n/a	8	174	n/a	n/a	2	257	5	232	2	335	3	175
products of mines	n/a	n/a	n/a	n/a	100	-	n/a	n/a	83	-	70	-	59	-	44	-
products of forests	n/a	n/a	n/a	n/a	5	-	n/a	n/a	3	-	11	-	1	-	2	-
manufactures and misc.	n/a	n/a	n/a	n/a	64	1	n/a	n/a	69	1	70	4	66	1	52	2
TOTAL	n/a	n/a	n/a	n/a	177	175	n/a	n/a	157	258	156	236	128	336	101	177
Waskada																
products of agriculture	1	177	-	183	-	217	-	238	-	285	-	237	1	394	-	222
products of mines	35	-	32	-	33	-	25	-	31	-	22	-	38	-	15	-
products of forests	4	-	7	-	-	-	1	-	1	-	-	-	-	-	2	-
manufactures and misc.	73	-	56	-	72	-	70	-	69	-	57	-	44	-	77	-
TOTAL	113	177	95	183	105	217	96	238	101	285	79	237	83	394	94	222
Hartney (C.N.R.)																
products of agriculture	n/a	n/a	n/a	n/a	n/a	n/a	-	107	n/a	n/a	-	141	-	133	-	101
products of mines	n/a	n/a	n/a	n/a	n/a	n/a	23	-	n/a	n/a	-	-	-	-	-	-
products of forests	n/a	n/a	n/a	n/a	n/a	n/a	1	-	n/a	n/a	1	-	1	-	3	-
manufactures and misc.	n/a	n/a	n/a	n/a	n/a	n/a	75	-	n/a	n/a	61	-	63	-	45	-
TOTAL	n/a	n/a	n/a	n/a	n/a	n/a	99	107	n/a	n/a	62	141	64	133	48	101
Hartney (C.P.R.)																
products of agriculture	n/a	n/a	n/a	n/a	-	85	n/a	n/a	1	122	-	122	-	160	-	97
products of mines	n/a	n/a	n/a	n/a	44	108	n/a	n/a	41	-	45	-	41	-	32	-
products of forests	n/a	n/a	n/a	n/a	20	2	n/a	n/a	9	-	7	-	6	-	3	-
manufactures and misc.	n/a	n/a	n/a	n/a	56	1	n/a	n/a	43	-	60	-	69	-	46	1
TOTAL	n/a	n/a	n/a	n/a	120	196	n/a	n/a	94	122	112	122	116	160	81	98
Deloraine																
products of agriculture	4	188	2	289	2	261	1	440	-	433	1	452	1	475	-	336
products of mines	103	-	86	-	91	-	83	-	86	-	79	-	68	1	50	-
products of forests	24	-	8	-	14	-	18	-	13	-	13	-	11	-	5	-
manufactures and misc.	151	-	117	-	153	-	102	-	164	-	229	1	195	5	146	1
TOTAL	282	188	213	289	260	261	204	440	263	433	322	453	275	481	201	337

(continued)

TABLE 8. - REVENUE, CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-67 (continued)

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Melita																
products of agriculture	n/a	n/a	n/a	n/a	9	205	n/a	n/a	2	386	4	291	6	501	4	245
products of mines	n/a	n/a	n/a	n/a	75	-	n/a	n/a	78	-	93	-	77	-	62	-
products of forests	n/a	n/a	n/a	n/a	17	-	n/a	n/a	19	-	14	-	18	-	20	-
manufactures and misc.	n/a	n/a	n/a	n/a	28	2	n/a	n/a	162	3	188	5	169	5	167	3
TOTAL	n/a	n/a	n/a	n/a	129	207	n/a	n/a	261	389	299	296	270	506	253	248
Boissevain																
products of agriculture	19	303	7	386	9	364	4	541	1	568	7	596	11	723	3	469
products of mines	129	-	125	-	123	-	111	-	112	-	92	-	75	-	56	-
products of forests	64	-	103	-	70	-	79	-	88	-	94	-	89	-	45	-
manufactures and misc.	145	-	114	-	106	-	137	-	132	1	158	-	137	10	115	-
TOTAL	357	303	349	386	308	364	331	541	333	569	351	596	312	733	219	469

Products of agriculture: all grains, seeds, hay and straw, animals and animal products, etc.

Products of mines: coal, cement, brick, asphalt, lime, etc.

Products of forests: lumber, and all processed natural wood, plywood, shingles, posts, poles, etc.

Manufactures and misc.: fertilizer, fuel oil, gasoline, scrap metal, etc.

n/a: means information not available.

Source: (1) Canadian National Railways, Analytical Services, Winnipeg.

(2) Canadian Pacific Railways, Department of Research, Montreal.

## Highway Transportation Services

The general availability of truck transport in the area is good. The service in most communities is reliable and frequent. Trucks of both the Canadian Pacific Transport Co. Ltd. and the Canadian National Transportation Ltd. service the area from Brandon<sup>1/</sup>.

Canadian Pacific Transport provide a truck service six days a week to Melita and Pierson and 5 days a week to Boissevain, Deloraine and Hartney. Service to Tilston, Dand, Medora, Goodlands, Waskada, Coulter and Lyleton is available 3 days a week. This service is extended to Elva, Napinka and Lauder three days a week when required. The Canadian National system also provides truck service to Hartney as well as to Elgin, Fairfax and Minto five days a week.

Local trucking firms which also service the communities in this area are listed below by community<sup>2/</sup>.

Croll: Ford's Transfer and Lawrence Transfer.  
Dalny: Hammond's Transportation Ltd. and Farough's Transfer.  
Elva: Farough's Transfer.  
Underhill: Ford's Transfer.  
Broomhill: Buscarlet's Transfer and Tilston Transfer.  
Dand: Hammond's Transportation Ltd.  
Coulter: Farough's Transfer and Hammond's Transportation Ltd.  
Regent: Ford's Transfer  
Fairfax: Ford's Transfer, Gullett's Transfer and Lawrence Transfer.  
Medora: Farough's Transfer  
Lyleton: Border Transport Ltd. and Farough's Transfer.  
Goodlands: Farough's Transfer and Hammond's Transportation Ltd.  
Lauder: Border Transport Ltd. and Hammond's Transportation Ltd.  
Tilston: Buscarlet's Transfer and Tilston Transfer.  
Napinka: Border Transport Ltd.  
Minto: Hammond's Transportation Ltd.  
Elgin: Border Transport Ltd., Ford's Transfer and Gulletts Transfer  
Pierson: Farough's Transfer.  
Waskada: Border Transport Ltd., Farough's Transfer and Hammond's Transportation Ltd.  
Hartney: Border Transport Ltd., Farough's Transfer and Hammond's Transportation Ltd.  
Deloraine: Farough's Transfer and Hammond's Transportation Ltd.  
Melita: Farough's Transfer.  
Boissevain: Hammond's Transportation Ltd.

All the carriers listed above operate to and from Brandon. Border Transport Ltd., Farough's Transfer, and Hammond's Transportation Ltd. all provide frequent service to and from Winnipeg.

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<sup>1/</sup> "Canadian Guide", International Railway publishing Co. Ltd., Montreal, November 1968.

<sup>2/</sup> "The M.T.A. Official Ship by Truck DIRECTORY", 1968-69, Manitoba Trucking Association, Winnipeg.

Greyhound Bus Lines also offers an express service, in addition to its passenger service, which operates daily between Deloraine, Hartney, Medora and Melita. The Grey Goose, Theissen and Manitoba Motor Transit bus lines all provide similar daily service to most of the communities on or adjacent to Highways 3 and 23.

Most local establishments, such as bakeries, dairies, soft drink manufacturers, bulk oil dealers, etc., have their own trucks and service the area as required.

### Soil Capability for Agriculture

The land comprising the study area is on the second Prairie Steppe at elevations from 2,300 feet above sea level on the Turtle Mountains to 1,400 feet where the Souris River flows out of the area. The Soil Capability map <sup>1/</sup> covers five soil areas: the morainic hills of the Turtle Mountains in the southeast, the depressed nearly level lacustrine basin of glacial Lake Souris in the central part, the gently undulating areas of the Waskada Till Plain in the southeast, the Oxbow-Ryerson Till Plain in the west, and a small portion of the Newdale Till Plain in the extreme northeast corner. Native vegetation varies from open grassland in the south-central area to parkland in the east, north, and west, to dense stands of broad-leaf and coniferous trees in the Turtle Mountain Forest Reserve.

The area has a layer of till but this is covered by water-sorted deposits in the basin section formerly occupied by glacial Lake Souris. This basin has moderately calcareous sediments ranging from sand to clay. The till, fairly uniform over the area, is moderately calcareous loamy material. Salts are widespread but the total area affected is small.

The soils of this area are complex in character. The most important major soil association is the Black Earth area. It covers all of the area except the Turtle Mountains, which is in the Gray Wooded soil zone. In the former association the better textured soils, namely the heavy sandy loams, loams and clay loams are suitable for both grain and mixed farming. This is especially true where these soils coincide with a generally smooth topography. However, throughout much of the Black Earth soil zone, soil texture is light. In this case agriculture becomes somewhat hazardous in view of the low rainfall and high rate of evaporation. Soil drifting, often associated with these lighter soils, can also become a serious problem. For instance, in the Souris Basin, between Findlay and Deleau and north of the Souris River, the sandy deposits have been blown into low dunes. These dunes occupy considerable areas and reduce the amount of land suitable for general agriculture<sup>2/</sup>. They occur largely in the north-west parts of the Hartney and Lauder hinterlands.

Much of the land west of the Souris River in the hinterlands of Lyleton and Coulter is characterized by soils which are light to medium in texture. At the same time the sub-soils tend to be fairly dry and well drained. Soil drifting is a constant danger and sand banks and blowouts are common on many farms.

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<sup>1/</sup> See envelope attached to inside back cover.

<sup>2/</sup> J.H. Ellis and W.H. Shafer, "Reconnaissance Soil Survey South-Western Manitoba - Soils Report No. 3", Manitoba Department of Agriculture, 1940.



Throughout the Black Earth soil zone, however, there are extensive areas of medium to heavy soils which are well adapted to agriculture. One such area lies south and east of the Souris River and east of the communities of Hartney and Lauder in the Souris Basin. The soils are of good texture and include some of the best agricultural land in the study area. While some soil drifting may occur it can be effectively limited with careful management.

The Turtle Mountains, in the south east corner of the study area, include the balance of the Land. The area consists of weakly developed grey wooded soils on forest-covered morainic hills. The topography ranges from moderate to steep. Nevertheless the soil is productive, but farming is limited to scattered sections where the topography is favorable. The other major limiting factor for agriculture is the increased likelihood of frost damage at the higher altitudes.

For a more intensive analysis of the soils and soil limitations present in the area, it is suggested that the reader study the soil capability map.

#### Temperature Extremes and Norms

In the month of June the mean daily temperature in the study area is about 60 degrees. In the month of July it rises to about 67 degrees. Temperatures during the growing season show little fluctuation. Most of the area is moderately susceptible to frost during the month of September. The area around Boissevain has the most moderate climate in the study area while the area around Pierson is the most likely to experience frost during the month of August (Table 9).

TABLE 9. - TEMPERATURE, NORMALS AND EXTREMES FOR METEOROLOGICAL STATIONS IN THE STUDY AREA.

Meteorological Station	January	February	March	April	May	June	July	August	September	October	November	December	Year
<b>Pierson</b>													
Mean Daily Maximum (2)	9.9	14.5	28.0	50.1	65.9	72.9	81.0	78.5	68.2	54.2	31.7	18.5	47.8
Mean Daily Minimum (2)	-9.8	-6.4	7.7	26.9	39.3	48.2	53.7	51.1	40.4	28.9	12.7	-0.2	24.4
Mean Daily Temperature (2)	-0.1	4.1	17.9	38.5	52.6	60.6	67.4	64.8	54.3	41.6	22.2	9.2	36.1
High Temperature (3)	48	58	75	90	103	107	109	102	99	90	73	63	109
Low Temperature (3)	-48	-54	-49	-15	10	15	28	21	10	8	-26	-43	-54
<b>Waskada</b>													
Mean Daily Maximum (3)	13.2	17.6	29.9	50.9	66.5	73.3	82.1	79.8	69.3	55.7	33.3	19.9	49.3
Mean Daily Minimum (3)	-7.8	-4.9	9.1	28.7	39.2	47.8	53.8	51.0	40.6	29.9	14.0	-0.2	25.1
Mean Daily Temperature (3)	2.7	6.4	19.5	39.8	52.9	60.6	68.0	65.4	55.0	42.8	23.7	9.9	37.2
High Temperature (1)	49	56	76	88	107	109	110	103	101	87	68	64	110
Low Temperature (1)	-45	-61	-43	-11	10	22	31	27	11	-7	-29	-49	-61
<b>Melita</b>													
Mean Daily Maximum (4)	12.6	16.3	28.4	50.9	65.6	72.7	80.3	78.4	67.7	56.4	33.0	20.8	48.6
Mean Daily Minimum (4)	-8.7	-6.0	7.3	26.3	37.8	47.1	53.0	51.0	40.4	30.2	13.8	0.6	24.4
Mean Daily Temperature (4)	2.0	5.2	17.9	38.6	51.7	59.9	66.7	64.7	54.1	43.3	23.4	10.7	36.5
High Temperature (2)	50	58	75	91	94	97	109	101	98	87	68	57	109
Low Temperature (2)	-49	-42	-40	-14	12	26	36	31	10	-9	-30	-42	-49
<b>Boissevain</b>													
Mean Daily Maximum (1)	12.1	15.8	28.3	49.0	64.6	71.6	79.5	76.8	65.8	53.7	32.1	20.2	47.5
Mean Daily Minimum (1)	-5.3	0.8	10.9	28.2	40.4	49.4	55.1	52.6	43.0	33.1	17.1	4.0	27.3
Mean Daily Temperature (1)	3.4	7.5	19.6	38.6	52.5	60.5	67.3	64.7	54.4	43.4	24.6	12.1	37.4
High Temperature (1)	54	61	71	91	92	103	108	98	97	90	68	49	108
Low Temperature (1)	-43	-38	-36	-12	10	28	36	32	17	0	-27	-32	-43

1. The date for these normals were from the full ten year period 1951-60 adjusted to the standard normal period 1931-60.

2. Normals were computed directly from a period of record of 25 to 30 years within the period 1931-60. In most cases the record existed over the full 30 years.

3. These averages were obtained by taking a ten year period of record, ending in the early 1960's. No adjustment factor was used.

4. These averages are based on the period of record of 10 to 24 years during the period 1931-60. No adjustment factor has been used.

Source: Canada Department of Transport, Meteorological Branch, Toronto.

## Precipitation

Much of the study area is within the south-east corner of the Palliser Triangle. It is semi-arid, with average annual precipitation of somewhat less than 19 inches. Snowfall comprises 25 to 30 per cent of this total. The period of peak precipitation usually occurs towards the end of June. However, there is a wide fluctuation in seasonal precipitation totals, especially during the period between April and July. During this period total precipitation is highest in the Boissevain area, which receives an average 9.7 inches. Boissevain also receives a substantial amount of snow in the month of May (4.0 inches). The area around the Pierson climatological station receives the least precipitation between April and July (average, 8.7 inches). It usually receives the least amount of snow in the month of May in the study area, with only 0.2 inches. The area around Melita receives an average of 9.7 inches of precipitation between April and July, including 1.6 inches of snow in May. Waskada (9.3 inches of rain; 0.4 inches of snow) and Lyleton (9.0 inches of rain and 1.0 inches of snow) are the remaining areas for which climatological data are available (Table 10).

Since 1950, P.F.R.A. has assisted financially and technically in the construction of more than 900 individual dugouts and stock watering dams in this area. In addition to these, there are more than 20 new projects, mostly dams, which have been proposed for future construction in this area.

## Field Shelterbelts

Since much of the study area is semi-arid, field shelterbelts have been used extensively. The first attempt at organized planting of field shelterbelts in Manitoba was the Lyleton Field Shelterbelt Project established in 1936 under the direction of the Canada Department of Agriculture. Since that time, farmers in the Lyleton area have planted and maintained 361 miles of field shelterbelts. In 1954, the Soils and Crops Branch of the Manitoba Department of Agriculture and Conservation<sup>1/</sup> began to actively promote organized field shelterbelt planting. As a result of these efforts, 330 miles of shelterbelts have been planted by farmers in the Agricultural Representative District of Melita. This district represents the western half of the study area and is comprised of the rural municipalities of Albert, Arthur, Brenda, Edward and the west half of Cameron. The two Agricultural Representative Districts which cover the balance of the study area - Boissevain and Souris - report substantially smaller shelterbelt plantings of 55 and 21 miles respectively.

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<sup>1/</sup> George Bonnefoy, "Field Shelterbelts for Manitoba", Manitoba Department of Agriculture and Conservation, Soils and Crops Branch.

TABLE 10. - MONTHLY AND ANNUAL AVERAGE PRECIPITATION FOR METEOROLOGICAL STATIONS IN THE STUDY AREA

Meteorological Station	January	February	March	April	May	June	July	August	September	October	November	December	Year
	inches												
Lyleton <sup>3</sup>													
Rain	0.03	0.03	0.14	0.53	2.16	3.70	2.01	2.40	1.53	0.84	0.13	0.02	13.52
Snow	10.80	5.80	9.20	5.20	1.00	0.00	0.00	0.00	0.40	4.00	7.70	6.60	50.70
Total Precipitation <sup>4</sup>	1.11	0.61	1.06	1.05	2.26	3.70	2.01	2.40	1.57	1.24	0.90	0.68	18.59
Pierson <sup>1</sup>													
Rain	0.00	0.01	0.16	0.61	2.02	3.21	2.47	2.30	1.08	0.60	0.12	0.01	12.59
Snow	8.40	7.90	7.00	3.90	0.20	0.00	0.00	0.00	0.20	1.30	6.40	7.50	42.80
Total Precipitation <sup>4</sup>	0.84	0.80	0.86	1.00	2.04	3.21	2.47	2.30	1.10	0.73	0.76	0.76	16.87
Waskada <sup>2</sup>													
Rain	0.02	0.00	0.23	0.69	1.74	3.75	2.73	2.31	1.20	0.60	0.18	0.03	13.48
Snow	7.90	7.60	8.40	3.30	0.40	0.00	0.00	0.00	0.10	3.30	6.70	8.50	46.20
Total Precipitation <sup>4</sup>	0.81	0.76	1.07	1.02	1.78	3.75	2.73	2.31	1.21	0.93	0.85	0.88	18.10
Melita <sup>2</sup>													
Rain	0.01	0.01	0.23	0.69	1.83	3.99	2.58	2.89	1.44	0.79	0.15	0.03	14.64
Snow	7.70	6.80	9.50	4.70	1.60	0.00	0.00	0.00	0.10	3.20	7.20	7.60	48.40
Total Precipitation <sup>4</sup>	0.78	0.69	1.18	1.16	1.99	3.99	2.58	2.89	1.45	1.11	0.87	0.79	19.48
Boissevain <sup>2</sup>													
Rain	0.00	0.03	0.09	0.47	1.96	4.18	2.11	2.96	1.46	0.90	0.22	0.01	14.39
Snow	11.80	5.00	11.30	5.60	4.00	0.00	0.00	0.00	0.60	4.50	9.30	9.30	61.40
Total Precipitation <sup>4</sup>	1.18	0.53	1.22	1.03	2.36	4.18	2.11	2.96	1.52	1.35	1.15	0.94	20.53

<sup>1</sup>Averages computed directly from a period of record of 25 to 30 years within the period 1931 - 1960.

<sup>2</sup>Averages based on the period of record of 10 to 24 years within the period 1931 - 1960.

<sup>3</sup>Averages based on the complete ten years of record from 1951 to 1960.

<sup>4</sup>Total precipitation measured in inches of rain. Ten inches of snow equals one inch of rain.

Source: Canada Department of Transport, Meteorological Branch, Toronto.



### Disposition of Grain Farm Acreage, Crop Years 1962-63 and 1966-67

According to the information provided by the farmers in the affidavits substantiating their request for delivery permit books, the acreage devoted to hard red spring wheat in the study area increased by 8 per cent between 1962-63 and 1966-67 to occupy 26 per cent of total grain farm acreage. At the same time acreage of Durum wheat dropped sharply - by close to two-thirds (Tables 11 and 12). The balance of the specified acreage also declined as a proportion of total grain farm acreage. There was a substantial increase in barley acreage, a slight increase in forage crops, and a decrease in the acreage of oats and rye.

The most significant changes in the use of grain farm acreage occurred in summerfallow acreage and flaxseed acreage. Between 1962-63 and 1966-67, summerfallow acreage declined by 16 per cent in the study area. This indicates a lessened concern regarding moisture conservation, and perhaps, a concomitant increase in reliance on spraying for weed control. On the other hand, the study area has experienced a rather strong swing towards flaxseed production. The acreage practically doubled between 1962-63 and 1966-67. At both Elva (closed in 1967) and Napinka it has surpassed wheat as the principal crop while at Lyleton it occupies only a slightly smaller acreage than wheat.

### Changes in Farm Operation Contemplated in the Boissevain Area, 1966-72

In the study area, 5.9 per cent of the farmers at 25 delivery points took part in the Prairie Farm Marketing Survey conducted in 1966 (Table 13). Almost half (46.5 per cent) of the farmers responding (114) felt that cultivation of crop land would be more intensive by 1972. A slightly smaller proportion (39.5 per cent) expected they would increase their grain acreage by 1972. This contrasts with only 5.3 per cent of the farmers who saw a reduction in their grain acreage by 1972. Twelve per cent of the farmers at Minto and 2.9 per cent at Lyleton expected a reduction in grain acreage. However, at Lyleton 60 per cent of the farmers indicated there would be more intensive cultivation of land and 54.3 per cent indicated increased acreage devoted to grain by 1972. In the case of Minto, on the question of more intensive cultivation only 36 per cent answered in the affirmative (vs. 46.5 for the study area) while on the question of increased grain acreage, only 24 per cent responded in the affirmative (vs. 39.5 per cent for the study area). The three delivery points with the most affirmative stand on increased grain acreage were Lyleton (54.3 per cent affirmative), Lauder and Pierson (both 75 per cent affirmative). Lyleton, Lauder and Pierson all go against the trend towards increased wheat acreage in the study area. All three delivery points showed reduced wheat acreage between 1962-63 and 1966-67.

On the other hand, Lyleton between 1962-63 and 1966-67 almost tripled its flaxseed acreage so that in 1966-67 flax was seriously challenging wheat as the dominant crop. At the same time Pierson more than doubled flaxseed acreage and Lauder came close to doubling the flaxseed acreage. Thus, it would appear that farmers in these three hinterlands see increased flaxseed acreage as opposed to increased wheat acreage by 1972.

TABLE 11. — GRAIN FARM ACREAGE DEVOTED TO SPECIFIED USE, BY DELIVERY POINT, 1962-63

Delivery Point	Wheat	Durum	Oats	Barley	Rye	Summer Fallow	Forage Crops	Flaxseed	Rapeseed	Other Crops	Unimproved Land	Total
Croft	Acres 5,638	440	1,236	1,125	—	4,485	670	1,380	—	—	1,986	16,960
	Per Cent of Total 33.2	2.6	7.3	6.6	—	26.5	4.0	8.1	—	—	11.7	100
Dalry	Acres 6,119	2,380	956	280	2,962	6,481	355	2,366	—	—	5,428	27,327
	Per Cent of Total 22.4	8.7	3.5	1.0	10.8	23.7	1.3	8.7	—	—	19.9	100
Leighton	Acres 6,739	266	1,434	1,221	365	5,382	737	969	—	858	1,459	18,630
	Per Cent of Total 36.2	1.4	7.7	6.6	2.0	28.9	3.9	5.2	—	0.3	7.8	100
Cranmer	Acres 3,533	1,077	503	408	2,389	4,387	300	1,291	—	30	1,090	15,008
	Per Cent of Total 23.5	7.2	3.4	2.7	15.9	29.2	2.0	8.6	—	0.2	7.3	100
Elva	Acres 3,013	95	1,979	124	1,311	4,362	987	2,073	—	60	4,717	18,721
	Per Cent of Total 16.1	0.5	10.6	0.6	7.0	23.3	5.3	11.1	—	0.3	25.2	100
Hathaway	Acres 4,772	300	1,117	460	—	4,415	489	679	—	105	2,364	14,701
	Per Cent of Total 32.5	2.1	7.6	3.1	—	30.0	3.3	4.6	—	0.7	16.1	100
Underhill	Acres 2,555	195	355	90	22	2,675	251	1,435	—	—	1,042	8,620
	Per Cent of Total 29.6	2.3	4.1	1.0	0.3	21.0	2.9	16.7	—	—	12.1	100
Broomhill	Acres 4,728	45	2,364	470	716	6,301	2,126	1,284	—	179	7,122	25,335
	Per Cent of Total 18.7	0.2	9.3	1.8	2.8	24.9	8.4	5.1	—	0.7	28.1	100
Dand	Acres 5,386	690	1,749	729	15	4,813	820	1,259	—	—	3,525	18,986
	Per Cent of Total 28.4	3.6	9.2	3.8	0.1	25.4	4.3	6.6	—	—	18.6	100
Coulter	Acres 5,493	170	1,976	224	1,629	4,509	1,211	1,794	—	—	7,822	24,828
	Per Cent of Total 22.1	0.7	8.0	0.9	6.5	18.2	4.9	7.2	—	—	31.5	100

(continued)

TABLE 11. — GRAIN FARM ACREAGE DEVOTED TO SPECIFIED USE, BY DELIVERY POINT, 1962-63 (continued)

Delivery Point			Wheat	Durum	Oats	Barley	Rye	Summer		Flaxseed	Rapeseed	Other Crops	Unimproved Land	Total
								Fallow	Forage Crops					
Regent	Acres	8,978	128	2,637	1,090	—	—	6,999	1,208	1,231	—	40	1,953	24,264
	Per Cent of Total	37.0	0.5	10.9	4.5	—	—	28.8	5.0	5.1	—	0.2	8.0	100
Fairfax	Acres	13,458	905	2,283	2,241	259	0.6	11,858	1,198	3,830	—	50	4,569	40,651
	Per Cent of Total	33.1	2.2	5.6	5.5	0.6	0.6	29.2	3.0	9.5	—	0.1	11.2	100
Medora	Acres	20,251	1,733	4,460	2,148	1,468	2.5	16,240	2,865	1,735	—	10	5,745	56,655
	Per Cent of Total	35.7	3.1	7.9	3.8	2.5	2.5	28.7	5.1	3.1	—	—	10.1	100
Lyleton	Acres	15,628	1,327	4,833	507	5,452	8.0	16,401	4,856	5,118	—	—	14,199	68,321
	Per Cent of Total	22.9	1.9	7.1	0.7	8.0	8.0	24.0	7.1	7.5	—	—	20.8	100
Goodlands	Acres	11,243	4,895	2,784	3,773	3,183	5.6	14,588	2,026	2,859	—	60	11,069	56,480
	Per Cent of Total	19.9	8.7	4.9	6.7	5.6	5.6	25.8	3.6	5.1	—	0.1	19.6	100
Lauder	Acres	6,319	410	3,763	345	3,889	9.0	8,850	2,376	3,338	—	40	13,889	43,219
	Per Cent of Total	14.6	1.0	8.7	0.8	9.0	9.0	20.5	5.5	7.7	—	0.1	32.1	100
Tilston	Acres	14,326	765	5,782	1,133	3,170	5.1	15,084	4,260	830	—	97	17,276	62,723
	Per Cent of Total	22.8	1.2	9.2	1.8	5.1	5.1	24.1	6.8	1.3	—	0.2	27.5	100
Napinka	Acres	5,660	909	6,102	864	3,876	8.2	10,804	4,077	2,672	56	50	12,317	47,387
	Per Cent of Total	12.0	1.9	12.9	1.8	8.2	8.2	22.8	8.6	5.6	0.1	0.1	26.0	100
Minto	Acres	17,359	661	3,583	2,448	182	0.3	15,786	708	3,134	—	450	8,235	52,546
	Per Cent of Total	33.0	1.3	6.8	4.7	0.3	0.3	30.0	1.3	6.0	—	0.9	15.7	100
Elgin	Acres	17,973	405	4,691	355	—	—	14,850	1,032	7,461	—	—	2,737	49,504
	Per Cent of Total	36.3	0.8	9.5	0.7	—	—	30.0	2.1	15.1	—	—	5.5	100

(continued)

TABLE 11. — GRAIN FARM ACREAGE DEVOTED TO SPECIFIED USE, BY DELIVERY POINT, 1962-63 (continued)

Delivery Point	Wheat		Durum	Oats	Barley	Rye	Summer		Forage	Flaxseed	Rapeseed	Other	Unimproved	Total
	Acres	Per Cent of Total					Fallow	Crops	Crops			Crops	Land	
Pierson	19,118	768	6,295	725	3,038	19,364	5,587	3,654	—	61	19,997	78,607		
	24.3	1.0	8.0	0.9	3.9	24.6	7.1	4.7	—	0.1	25.4	100		
Waskada	12,946	3,452	1,867	758	3,309	13,099	1,297	4,165	—	20	3,208	44,121		
	29.3	7.8	4.2	1.7	7.5	29.7	2.9	9.5	—	0.1	7.3	100		
Hartney	15,539	333	9,523	493	3,393	19,873	5,913	9,310	—	50	26,116	90,543		
	17.2	0.4	10.4	0.5	3.8	22.0	6.5	10.3	—	0.1	28.8	100		
Deloraine	27,347	1,807	7,640	4,829	926	26,950	3,982	3,754	—	272	20,991	98,498		
	27.8	1.8	7.8	4.9	0.9	27.4	4.0	3.8	—	0.3	21.3	100		
Melita	18,682	2,780	7,624	1,253	4,576	22,826	8,861	9,680	—	180	22,620	99,082		
	18.9	2.8	7.7	1.3	4.6	23.0	8.9	9.8	—	0.2	22.8	100		
Boissevain	34,830	4,919	15,313	4,084	50	39,767	6,638	6,066	—	410	33,385	145,462		
	23.9	3.4	10.5	2.8	—	27.3	4.6	4.2	—	0.3	23.0	100		
Total	307,633	31,855	102,849	32,177	46,180	321,149	64,830	83,367	56	2,222	254,861	1,247,179		
	24.7	2.5	8.2	2.6	3.7	25.8	5.2	6.7	—	0.2	20.4	100		

Source: Canadian Wheat Board, Winnipeg.



TABLE 12. — GRAIN FARM ACREAGE DEVOTED TO SPECIFIED USE, BY DELIVERY POINT, 1966-67

Delivery Point	Wheat			Durum		Oats		Barley		Rye		Summer fallow		Forage Crops		Flaxseed		Rapeseed		Other Crops		Unimproved Land		Total
	Acres	Per Cent of Total		Acres	Per Cent of Total	Acres	Per Cent of Total	Acres	Per Cent of Total	Acres	Per Cent of Total	Acres	Per Cent of Total	Acres	Per Cent of Total	Acres	Per Cent of Total	Acres	Per Cent of Total	Acres	Per Cent of Total	Acres	Per Cent of Total	
Croll	2,882	26.5		155	1.4	635	5.8	1,460	13.4	—	—	2,016	18.5	640	5.9	1,595	14.7	55	0.5	—	—	1,442	13.3	10,880
																								100
Dalny	6,356	24.0		1,150	4.3	454	1.7	652	2.5	2,014	7.6	5,083	19.2	470	1.8	4,876	18.4	—	—	245	0.9	5,195	19.6	26,495
																								100
Leighton	5,732	36.3		285	1.8	689	4.4	1,099	7.0	230	1.4	3,599	22.8	1,124	7.1	2,060	13.1	—	—	51	0.3	912	5.8	15,781
																								100
Cranmer	3,946	30.9		808	6.3	425	3.4	503	3.9	782	6.1	3,326	26.0	300	2.4	1,863	14.6	—	—	35	0.3	780	6.1	12,768
																								100
Elva	2,770	17.4		—	—	1,112	7.0	82	0.5	1,041	6.5	365	23.1	690	4.3	2,933	18.5	—	—	—	—	3,611	22.7	15,914
																								100
Hathaway	3,808	31.6		92	0.8	762	6.3	808	6.7	—	—	2,709	22.5	368	3.0	1,767	14.6	—	—	40	0.3	1,712	14.2	12,066
																								100
Underhill	closed																							
	Acres	Per Cent of Total																						
Broomhill	3,615	17.5		—	—	1,602	7.8	450	2.2	713	3.5	3,986	19.4	2,154	10.5	2,663	13.0	—	—	50	0.2	5,271	25.7	20,504
																								100
Dand	5,788	33.3		—	—	1,441	8.3	356	2.0	—	—	3,553	20.5	791	4.6	2,792	16.1	125	0.7	136	0.8	2,384	13.7	17,366
																								100
Coulter	4,598	22.9		40	0.2	1,133	5.6	363	1.8	925	4.6	3,801	18.9	796	4.0	2,679	13.3	—	—	15	0.1	5,725	28.6	20,075
																								100

(continued)

TABLE 12. - GRAIN FARM ACREAGE DEVOTED TO SPECIFIED USE, BY DELIVERY POINT, 1966-67 (continued)

Delivery Point			Wheat	Durum	Oats	Barley	Rye	Summer		Flaxseed	Rapeseed	Other Crops	Unimproved Land	Total
								fallow	Forage Crops					
Regent	Acres	7,826	-	-	1,870	1,172	-	4,959	710	4,086	-	300	1,821	22,744
	Per Cent of Total	34.4	-	-	8.2	5.2	-	21.8	3.1	18.0	-	1.3	8.0	100
Fairfax	Acres	13,842	660	-	2,052	3,972	-	9,885	1,767	7,065	891	267	4,421	44,822
	Per Cent of Total	30.9	1.5	-	4.6	8.9	-	22.0	3.9	15.8	1.9	0.6	9.9	100
Medora	Acres	25,282	840	-	3,416	4,432	1,431	14,624	4,089	5,125	-	65	6,443	65,747
	Per Cent of Total	38.5	1.3	-	5.2	6.7	2.2	22.2	6.2	7.8	-	0.1	9.8	100
Lyleton	Acres	16,676	90	-	3,708	373	4,685	15,771	5,495	16,030	-	524	13,609	76,961
	Per Cent of Total	21.7	0.1	-	4.8	0.5	6.1	20.5	7.1	20.8	-	0.7	17.7	100
Goodlands	Acres	14,691	2,662	-	2,691	4,520	1,068	11,062	1,293	7,147	-	140	10,006	55,280
	Per Cent of Total	26.6	4.8	-	4.9	8.2	1.9	20.0	2.3	12.9	-	0.3	18.1	100
Lauder	Acres	5,347	-	-	2,700	325	2,227	6,727	2,903	4,729	215	525	12,185	37,893
	Per Cent of Total	14.1	-	-	7.0	0.9	5.8	17.7	7.7	12.5	0.6	1.4	32.2	100
Tilston	Acres	18,676	590	-	6,456	1,947	2,493	14,022	3,880	3,259	-	245	16,180	67,748
	Per Cent of Total	27.6	0.9	-	9.5	2.9	3.7	20.7	5.7	4.8	-	0.4	23.8	100
Napinka	Acres	4,152	513	-	4,694	676	2,423	9,004	3,473	4,846	225	40	10,017	40,063
	Per Cent of Total	10.4	1.3	-	11.7	1.7	6.0	22.5	8.6	12.1	0.6	0.1	25.0	100
Minto	Acres	18,119	44	-	3,218	3,613	-	12,591	930	6,152	175	10	8,144	52,996
	Per Cent of Total	34.2	0.1	-	6.1	6.8	-	23.8	1.7	11.6	0.3	-	15.4	100
Elgin	Acres	21,378	800	-	4,327	1,985	-	11,464	884	11,559	215	515	1,850	54,977
	Per Cent of Total	38.9	1.5	-	7.9	3.6	-	20.9	1.6	21.0	0.3	0.9	3.4	100

(continued)

TABLE 12. — GRAIN FARM ACREAGE DEVOTED TO SPECIFIED USE, BY DELIVERY POINT, 1966-67 (continued)

Delivery Point		Wheat	Durum	Oats	Barley	Rye	Summer fallow	Forage Crops	Flaxseed	Rapeseed	Other Crops	Unimproved Land	Total
Pierson	Acres	17,052	105	4,849	3,222	3,584	18,587	4,898	8,263	—	450	16,076	77,086
	Per Cent of Total	22.1	0.1	6.3	4.2	4.6	24.1	6.4	10.7	—	0.6	20.9	100
Waskada	Acres	12,552	2,249	1,335	1,692	3,639	11,777	1,615	9,375	—	675	2,358	47,267
	Per Cent of Total	26.6	4.8	2.8	3.6	7.7	24.9	3.4	19.8	—	1.4	5.0	100
Hartney	Acres	17,119	15	7,717	680	3,087	18,064	8,101	13,751	135	1,618	25,979	96,266
	Per Cent of Total	17.8	—	8.0	0.7	3.2	18.8	8.4	14.3	0.1	1.7	27.0	100
Deloraine	Acres	31,020	535	6,993	4,627	55	23,632	4,995	9,331	350	589	22,360	104,487
	Per Cent of Total	29.7	0.5	6.7	4.4	—	22.6	4.8	8.9	0.3	0.6	21.5	100
Melita	Acres	24,880	596	6,332	1,667	4,937	24,708	6,808	16,486	620	565	20,649	108,248
	Per Cent of Total	23.0	0.6	5.8	1.5	4.6	22.8	6.3	15.2	0.6	0.5	19.1	100
Boissevain	Acres	42,750	201	13,947	7,835	—	30,697	8,228	14,991	676	1,166	32,486	152,977
	Per Cent of Total	27.9	0.1	9.1	5.2	—	20.1	5.4	9.8	0.4	0.8	21.2	100
Total	Acres	330,857	12,430	84,558	48,511	35,334	269,332	67,402	165,423	3,682	8,266	231,616	1,257,411
	Per Cent of Total	26.3	1.0	6.7	3.9	2.8	21.4	5.4	13.2	0.3	0.6	18.4	100

Source. Canadian Wheat Board, Winnipeg.

TABLE 13. - CHANGES IN FARM OPERATION CONTEMPLATED BY GRAIN FARMERS IN THE BOISSEVAIN STUDY AREA, 1966 to 1972

	More Intensive Cultivation of Crop Land	Reduction in Grain Acreage	Increase in Grain Acreage	Increase in Production of Forage Crops	Increased Use of Fertilizer	Enlargement of Farm by Renting or Purchasing Land	Withdrawal From Farming for Retirement or Other Reasons	Increased Amount of Grain to be Fed to Livestock	Move Home to Nearby Village or Town but Continue to operate Present Farm	Percentage of Grain-Farm Operators Taking Part in Survey
per cent answering in the affirmative										
Leighton	60.0	-	40.0	-	60.0	-	20.0	20.0	-	17.2
Broomhill Regent	28.6 -	- -	14.3 20.0	28.6 -	42.9 20.0	28.6 -	14.3 20.0	14.3 20.0	- -	24.1 12.5
Lyleton Lauder Minto	60.0 - 36.0	2.9 - 12.0	54.3 75.0 24.0	5.7 - 8.0	91.4 100.0 64.0	28.5 25.0 32.0	5.7 - 8.0	17.1 25.0 12.0	5.7 25.0 4.0	30.5 8.5 28.4
Pierson Waskada	62.5 85.7	- -	75.0 14.3	- -	100.0 100.0	75.0 -	- -	12.5 -	- 14.3	7.5 10.6
Boissevain	25.0	-	25.0	16.6	50.0	-	25.0	25.0	-	4.4
Study Area	46.5	5.3	39.5	7.0	73.7	25.4	9.6	14.9	4.3	5.9

Source: Prairie Farm Marketing Survey, Geographical Branch, Department of Energy, Mines and Resources, Ottawa, 1966.



It appears that reduced summerfallow will be the basis for a more intensive cultivation of crop land especially at Pierson and Waskada. Both had proportionally more land in summerfallow in 1966-67 than the average for the study area, as a whole. Only 7.0 per cent of the farmers visualize increased production of forage crops by 1972. Farmers at Broomhill, Lyleton, Minto and Boissevain were the only ones expressing this possibility.

The prospect of increased use of fertilizer by 1972 was general. Three-quarters of all the farmers replied in the affirmative to this question.

More than a quarter of the farmers expressed a desire to increase the size of their farms by 1972 either by renting or purchasing land. Of the five delivery points reporting on this question, Pierson with 75 per cent was the most affirmative.

Only 9.6 per cent of the farmers in the study area expressed the desire to withdraw from farming or retire. Twenty per cent of the farmers at both Lyleton and Regent expressed this desire. At Boissevain, 25.0 wanted to withdraw or retire while at Broomhill the percentage was 14.3.

Waskada was the only delivery point where none of the farmers visualized increased feeding of grain to livestock. For the study area, 14.9 per cent of the farmers thought this was a possibility.

Only 4.3 per cent of the farmers thought they would move their residence to a nearby town while continuing to operate their farms. However, 25 per cent of the farmers at Lauder and 14.3 per cent of the farmers at Waskada expected to move to adjacent towns while continuing to work their farms.

#### Six-Year Average Yields

In the case of wheat production, Croll with a six-year average of 26.3 bushels and a low of 25 bushels in this period, appears to be one of the more productive hinterlands in the area. The least successful wheat producing area is around Pierson which has a five-year wheat yield average of 17.8 bushels to the acre and a low in this same period of 10 bushels (Table 14).

Flax yields in this semi-arid region are highly variable. Nine out of the 26 delivery points studied experienced flax yields which were less than half their six-year average. These were Leighton, Hathaway, Medora, Lyleton, Goodlands, Tilston, Pierson, Deloraine and Melita. In fact, Hathaway experienced a flax crop with a yield that was less than a third of its six-year average.

#### Protein Content

The semi-arid climate of the study area is conducive to a high protein content (Table 15). Crop district No. 1, which covers the study area, has had wheat crops which have fairly consistently exceeded the provincial average in protein content. In two of the past seven years, protein content in Crop District No. 1 surpassed the average for all the Prairie Provinces.

TABLE 14. - SIX-YEAR AVERAGE YIELD OF WHEAT, OATS, BARLEY AND FLAXSEED, BY DELIVERY POINT, 1962 TO 1967

Delivery Point	Wheat				Oats				Barley				Flaxseed			
	Six-year average				Six-year average				Six-year average				Six-year average			
	High	Low	Range	average	High	Low	Range	average	High	Low	Range	average	High	Low	Range	average
	bushels per acre				bushels per acre				bushels per acre				bushels per acre			
Croll	30	25	5	26.3	65	45	20	53.3	40	25	15	31.7	15	6	9	11.3
Dalry <sup>1</sup>	30	15	15	24.2	65	30	35	48.7	50	20	30	41.2	15	7	8	10.2
Leighton	30	15	15	22.5	60	30	30	45.8	45	25	20	35.0	12	5	7	10.2
Cranmer	28	20	8	22.5	45	30	15	37.5	40	20	20	30.0	15	7	8	12.0
Elva <sup>3</sup>	25	18	7	20.2	70	25	45	45.0	n/a	n/a	n/a	n/a	12	8	4	9.4
Hathaway	25	14	11	21.7	50	20	30	42.5	45	15	30	33.3	12	3	9	9.8
Underhill <sup>2</sup>	30	15	15	21.6	45	30	15	36.3	30	25	5	27.5	10	7	3	8.7
Broomhill	30	20	10	23.3	60	15	45	33.3	40	18	22	29.7	12	5	7	8.5
Dand	30	15	15	22.8	40	20	20	31.7	25	20	5	24.2	10	5	5	9.0
Coulter	27	12	15	21.3	50	15	35	37.7	40	15	25	25.3	12	5	7	9.8
Regent	25	18	7	23.0	70	30	40	47.4	50	15	35	31.7	15	9	6	11.3
Fairfax	22	15	7	18.0	50	35	15	41.7	35	25	10	30.0	12	7	5	9.7
Medora <sup>4</sup>	32	15	17	20.8	70	15	55	41.0	40	20	20	32.0	15	4	11	10.0
Lyleton <sup>5</sup>	30	14	16	21.8	40	30	10	35.0	40	25	15	31.0	12	4	8	9.8
Goodlands	25	15	10	20.0	50	30	20	41.7	35	30	5	33.3	15	5	10	11.2
Lauder	31	18	13	26.5	60	30	30	45.8	50	27	23	39.5	12	5	7	10.0
Tilston	25	13	12	21.7	50	22	28	42.8	40	25	15	34.2	12	3	9	8.2
Napinka	30	15	15	23.7	60	30	30	45.0	40	10	30	24.2	12	10	2	10.3
Minto	22	15	7	19.0	50	30	20	38.3	30	17	13	24.5	13	6	7	9.5
Elgin	28	18	10	22.7	60	20	40	41.7	40	25	15	32.8	12	5	7	9.8
Pierson <sup>6</sup>	20	10	10	17.8	60	15	45	43.0	45	15	30	33.0	15	4	11	9.6
Waskada	30	20	10	25.0	60	40	20	52.5	50	25	25	39.2	15	8	7	12.5
Hartney	30	18	12	23.5	45	30	15	39.2	40	25	15	30.0	9	4	5	7.7
Deloraine	25	14	11	20.8	60	20	40	41.7	35	20	15	29.2	15	5	10	11.0
Melita	25	16	9	20.0	45	18	27	32.2	35	15	20	26.7	12	4	8	8.5
Boissevain	25	18	7	21.2	50	30	20	40.0	30	15	15	24.2	12	7	5	10.2

<sup>1</sup>Four-year average, 1964 to 1967<sup>3</sup>Five-year average, 1962 to 1966<sup>5</sup>Five-year average, 1963 not available<sup>2</sup>Three-year average, 1962 to 1964<sup>4</sup>Five-year average, 1965 not available<sup>6</sup>Five-year average, 1963 to 1967

Source: Canadian Wheat Board, Winnipeg.

TABLE 15. — PROTEIN CONTENT OF HARD RED SPRING WHEAT, BY DELIVERY POINT, 1961-1967

Delivery Point	1961			1962			1963			1964			1965			1966			1967		
	Range %	Average %		Range %	Average %		Range %	Average %		Range %	Average %		Range %	Average %		Range %	Average %		Range %	Average %	
Croll	14.0-15.3	14.8		—	13.2		14.2-15.1	14.7		—	14.1		—	—		12.0-13.6	12.8		13.5-14.2	13.8	
Dalry	—	14.7		12.3-13.5	12.9		—	12.8		14.8-15.6	15.2		—	14.3		14.5-14.7	14.6		13.8-16.1	15.0	
Leighton	—	—		—	—		—	13.2		13.9-14.9	14.4		—	14.2		—	—		14.0-14.7	14.4	
Granmer	—	15.3		10.7-14.1	13.3		11.1-16.0	14.0		13.8-14.4	14.1		—	12.7		—	—		13.9-15.9	14.9	
Elva	—	15.0		12.2-14.1	13.1		—	—		12.9-15.3	14.2		—	13.0		—	14.7		—	—	
Hathaway	15.2-16.5	15.9		12.3-13.5	12.9		—	14.6		13.9-14.8	14.2		—	14.1		12.3-14.2	13.6		12.6-13.2	12.9	
Underhill	13.6-15.2	14.5		11.8-12.6	12.2		—	—		14.0-14.4	14.2		13.6-14.3	14.0		—	—		—	—	
Broomhill	13.6-15.7	14.8		13.4-13.5	13.4		13.6-15.0	14.1		13.3-15.4	14.8		12.2-14.1	13.2		—	—		13.0-14.7	14.0	
Dand	14.5-15.6	15.0		13.0-14.3	13.7		14.7-15.9	15.3		13.1-14.7	14.0		—	12.6		12.0-12.3	12.2		12.0-14.8	13.6	
Coulter	14.5-15.8	15.3		11.4-13.1	12.4		14.6-14.7	14.6		13.9-15.3	14.6		14.1-15.0	14.5		14.1-15.5	14.9		14.1-14.7	14.4	
Regent	14.3-16.2	15.0		11.9-13.0	12.4		13.0-14.4	13.8		11.9-15.1	13.6		12.8-14.0	13.5		11.0-14.1	12.4		11.8-15.6	13.0	
Fairfax	14.9-16.9	15.7		13.1-14.4	13.8		13.6-15.1	14.4		12.7-14.7	13.7		13.5-15.6	14.4		10.8-12.7	12.0		13.7-14.1	13.8	
Medora	—	14.1		12.6-13.9	13.2		—	12.4		12.2-14.4	13.8		11.6-13.5	12.6		12.7-14.1	13.2		13.6-15.3	14.5	
Lyleton	13.5-14.9	14.4		12.4-13.9	13.1		12.3-14.3	13.3		14.2-16.6	15.0		13.0-14.3	13.6		11.8-13.6	12.6		13.5-15.7	14.2	
Goodlands	14.1-16.1	14.9		12.4-13.1	12.7		13.4-15.0	14.2		14.7-16.1	15.4		12.3-13.8	13.1		12.8-13.5	13.1		12.8-16.0	14.2	
Lauder	13.2-15.4	14.0		12.5-13.2	12.8		—	14.2		14.1-15.5	14.7		13.5-15.0	14.2		12.3-15.5	13.6		11.7-14.2	13.2	
Tilston	14.1-14.4	14.2		11.6-13.1	12.4		—	—		11.6-15.9	14.1		13.0-13.8	13.5		10.7-14.4	12.5		12.6-15.5	13.7	
Napinka	14.4-14.7	14.6		12.5-13.5	13.0		—	13.8		11.3-15.2	13.2		13.7-14.3	14.0		—	—		11.0-12.8	11.6	
Minto	13.3-15.6	14.4		11.7-14.2	13.2		12.5-15.5	14.1		13.7-15.4	14.6		12.9-14.2	13.6		12.4-13.2	12.8		10.3-11.8	11.2	
Elgin	15.4-16.0	15.7		13.8-14.8	14.3		13.7-15.9	14.7		11.6-14.9	13.4		12.3-14.7	13.5		10.5-10.8	10.6		12.3-14.1	13.1	
Pierson	14.9-15.2	15.0		11.5-14.7	13.6		13.6-15.3	14.2		14.5-15.6	15.0		13.4-14.5	13.8		14.1-14.9	14.5		13.8-14.8	14.4	
Waskada	—	14.6		11.1-14.8	12.9		14.6-15.3	14.9		12.4-16.2	14.3		—	13.7		12.3-14.3	13.6		13.4-13.7	13.6	
Hartney	13.1-14.6	14.1		11.8-12.9	12.4		13.4-15.2	14.4		12.6-14.2	13.3		12.5-15.0	14.0		11.9-14.2	13.1		11.7-14.6	13.3	
Deloraine	13.2-14.8	14.0		11.9-13.8	12.8		13.8-14.5	14.2		12.6-14.8	13.8		11.7-14.6	13.4		11.8-14.1	12.9		11.4-14.2	12.9	
Melita	13.7-15.3	14.7		12.2-13.9	13.1		14.2-16.8	15.2		13.3-15.3	14.0		13.0-14.1	13.8		13.5-15.9	14.7		11.6-11.9	11.8	
Boissevain	13.7-14.6	14.1		11.9-13.8	12.6		12.8-15.4	14.1		12.3-15.4	13.8		12.7-13.2	12.9		10.7-13.4	12.3		13.4-13.9	13.6	
Crop District No. 1	12.9-16.5	14.6		10.7-14.8	13.1		12.1-16.8	14.3		11.3-16.6	14.2		11.6-15.6	13.6		10.5-15.9	13.1		10.3-16.1	13.4	
Manitoba	9.9-17.8	14.1		9.7-18.0	13.2		10.7-17.2	14.1		10.3-17.5	14.0		9.4-19.2	13.2		9.4-16.6	13.0		9.1-18.5	12.9	
Prairie Provinces	8.9-19.1	14.2		8.4-18.6	13.9		8.5-19.2	14.3		8.1-19.3	14.9		8.7-19.2	13.5		8.4-17.7	13.2		8.8-19.1	13.8	

Source: Grain Research Laboratory, Board of Grain Commissioners, Winnipeg.

— : Not available.

### Prairie Farm Assistance Act Payments 1961-62 to 1967-68

The great majority of the farmers in the study area received P.F.A.A. payments as a result of the severe drought conditions of 1961-62 (Table 16). The severity of the drought is reflected in the fact that much of its impact spilled over into succeeding years. Also, as recently as 1967-68, more than half the farmers at Napinka and Pierson and close to half the farmers at Broomhill and Melita received P.F.A.A. payments.

### Farm Size and Land Tenure

The average size of farm in the study area was generally larger in 1966-67 than in 1962-63. The total number of grain farms in the study area declined from 2,088 in 1962-63 to 1,924 in 1966-67. This follows the general trend for the prairies as a whole of fewer but larger farms.

Most delivery points in the study area had moderate increases in average or mean farm size. Dalny had the largest increase, from a mean size of 736 acres in 1962-63 to 946 acres in 1966-67. A large part of this increase can be attributed to a substantial increase in the size of the largest farm in the hinterland - from 2,477 acres to 6,317 acres (Table 17). Because average farm size can be changed greatly by a large shift in either end of the size scale the median size group is perhaps a better indicator of farm size changes. The median size is that which has half the number of farms smaller than it and half larger. In this report, the farms have been grouped in 100 acre intervals and the group is denoted by the mid-point of its interval (Table 18). In the study area, 10 out of 25 points changed their median size (Table 17). Coulter was the only point to decrease its median size, a decrease from 650 to 550 acres. The largest median farm size increase occurred at Hathaway, where the increase was from 350 to 650 acres. Other large increases occurred at Fairfax, Lyleton and Medora. All increased from 450 to 650 acres between 1962-63 and 1966-67. For the area as a whole the median size of farm increased from 450 to 650 acres between 1962-63 and 1966-67.

The greatest decreases in the numbers of farms were in the groups 301-400 and 401-500 acres where decreases of 99 and 88 farms were reported between the crop years 1962-63 and 1966-67. Decreases in numbers of farms are general from 101-200 acres through to 701-800 acres. Beyond this latter group, increases in the numbers of farms become prevalent over the time period shown. The above trends are indicative of farm consolidation which is currently taking place in the prairies.

The general trend between 1962-63 and 1966-67 is for a greater proportion of the land to be owned rather than rented, by the operator (Table 19). For the study area as a whole, the proportion of owned land increased from 68.3 per cent in 1962-63 to 72.6 per cent in 1966-67. Some reasons for increasing land ownership may be the good crops and sales during this period, the Farm Credit Corporation was very active during those years and, lastly, the producers expectation of ever rising land values. The size of the elevator service area appears to have no significant effect upon the distribution of the land between ownership and a rental basis.



TABLE 16. - PRAIRIE FARM ASSISTANCE ACT PAYMENTS TO SPECIFIED AREAS IN THE STUDY REGION, 1961-62 TO 1967-68

Delivery Point	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
Argue							
Number of recipients		1					
Per cent of total units receiving payments	-		-	-	-	-	-
Total amount paid (\$)		600					
Croll							
Number of recipients	7	1					
Per cent of total units receiving payments	23	3	-	-	-	-	-
Total amount paid (\$)	2,003	390					
Elva							
Number of recipients	37		19				
Per cent of total units receiving payments	88	-	49	-	-	-	-
Total amount paid (\$)	23,511		4,387				
Underhill							
Number of recipients	13	1					
Per cent of total units receiving payments	93	7	-	-	-	-	-
Total amount paid (\$)	4,618	600					
Broomhill							
Number of recipients	21	10	15				12
Per cent of total units receiving payments	57	26	42	-	-	-	44
Total amount paid (\$)	9,221	2,253	3,615				3,710
Dand							
Number of recipients	37						
Per cent of total units receiving payments	109	-	-	-	-	-	-
Total amount paid (\$)	11,480						
Coulter							
Number of recipients	22						3
Per cent of total units receiving payments	50	-	-	-	-	-	9
Total amount paid (\$)	10,987						630
Regent							
Number of recipients	15						
Per cent of total units receiving payments	31	-	-	-	-	-	-
Total amount paid (\$)	3,614						

(continued)

TABLE 16. -- PRAIRIE FARM ASSISTANCE ACT PAYMENTS TO SPECIFIED AREAS IN THE STUDY REGION, 1961-62 TO 1967-68 (continued)

Delivery Point	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
Fairfax							
Number of recipients	6	32					
Per cent of total units receiving payments	10	51	-	-	-	-	-
Total amount paid (\$)	1,865	13,644					
Medora							
Number of recipients	64		9			7	
Per cent of total units receiving payments	63	-	9	-	-	7	-
Total amount paid (\$)	28,363		1,945			1,870	
Lyleton							
Number of recipients	59						29
Per cent of total units receiving payments	55	-	-	-	-	-	26
Total amount paid (\$)	33,990						8,720
Goodlands							
Number of recipients	57						
Per cent of total units receiving payments	59	-	-	-	-	-	-
Total amount paid (\$)	23,077						
Lauder							
Number of recipients	42	10	17				13
Per cent of total units receiving payments	63	16	29	-	-	-	28
Total amount paid (\$)	12,952	1,376	3,531				4,100
Tilston							
Number of recipients	52		11	1			36
Per cent of total units receiving payments	52	-	11	1	-	-	37
Total amount paid (\$)	30,283		1,841	280			9,610
Napinka							
Number of recipients	53	23	46				37
Per cent of total units receiving payments	68	31	68	-	-	-	66
Total amount paid (\$)	23,256	6,139	13,491				9,527
Minto							
Number of recipients	34	19					
Per cent of total units receiving payments	38	19	-	-	-	-	-
Total amount paid (\$)	10,450	5,564					

(continued)

TABLE 16. — PRAIRIE FARM ASSISTANCE ACT PAYMENTS TO SPECIFIED AREAS IN THE STUDY REGION, 1961-62 TO 1967-68 (continued)

Delivery Point	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
Elgin							
Number of recipients	18	29					
Per cent of total units receiving payments	23	37	—	—	—	—	—
Total amount paid (\$)	5,155	19,999					
Pierson							
Number of recipients	98		33				68
Per cent of total units receiving payments	82	—	31	—	—	—	58
Total amount paid (\$)	60,541		7,726				21,503
Waskada							
Number of recipients	45		—	—	—	—	—
Per cent of total units receiving payments	69	—	—	—	—	—	—
Total amount paid (\$)	22,281						
Hartney							
Number of recipients	68	36	27				7
Per cent of total units receiving payments	51	27	20	—	—	—	6
Total amount paid (\$)	21,889	9,739	6,099				1,695
Deloraine							
Number of recipients	134		—	—	—	—	—
Per cent of total units receiving payments	73	—	—	—	—	—	—
Total amount paid (\$)	39,550						
Melita							
Number of recipients	151	27	54				68
Per cent of total units receiving payments	101	19	34	—	—	—	43
Total amount paid (\$)	83,254	6,970	13,867				16,951
Boissevain							
Number of recipients	54	22	—	—	—	—	—
Per cent of total units receiving payments	20	8	—	—	—	—	—
Total amount paid (\$)	11,855	8,857					

Source: Canada Department of Agriculture, Regina.

—: No payments made.

TABLE 17. - AVERAGE ACREAGE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1966-67

Delivery Point		1962-63	1966-67
Croll	Number of farms	30	20
	Mean size	560 acres	544 acres
	Maximum size	1,920 acres	1,280 acres
	Minimum size	160 acres	160 acres
	Median size	450 acres	450 acres
	Modal size group	450 acres	450 acres
Dalny	Number of farms	37	28
	Mean size	736 acres	946 acres
	Maximum size	2,477 acres	6,317 acres
	Minimum size	160 acres	160 acres
	Median size	650 acres	700 acres
	Modal size group	450 acres and 650 acres	650 acres
Leighton	Number of farms	32	29
	Mean size	578 acres	544 acres
	Maximum size	1,988 acres	1,380 acres
	Minimum size	160 acres	160 acres
	Median size	450 acres	450 acres
	Modal size group	350 acres	350 acres
Cranmer	Number of farms	25	23
	Mean size	610 acres	555 acres
	Maximum size	1,120 acres	960 acres
	Minimum size	160 acres	308 acres
	Median size	650 acres	650 acres
	Modal size group	650 acres	650 acres
Elva	Number of farms	35	23
	Mean size	532 acres	692 acres
	Maximum size	1,040 acres	1,920 acres
	Minimum size	160 acres	70 acres
	Median size	550 acres	650 acres
	Modal size group	350 acres	650 acres
Hathaway	Number of farms	30	20
	Mean size	493 acres	603 acres
	Maximum size	1,120 acres	1,120 acres
	Minimum size	160 acres	85 acres
	Median size	350 acres	650 acres
	Modal size group	350 acres	350 acres
Underhill	Number of farms	15	
	Mean size	570 acres	
	Maximum size	960 acres	closed
	Minimum size	160 acres	
	Median size	650 acres	
	Modal size group	650 acres	



TABLE 17. - AVERAGE ACREAGE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1966-67  
(continued)

Delivery Point		1962-63	1966-67
Broomhill	Number of farms	39	29
	Mean size	639 acres	707 acres
	Maximum size	1,760 acres	1,360 acres
	Minimum size	160 acres	160 acres
	Median size	650 acres	650 acres
	Modal size group	350 acres, and 650 acres, and 750 acres	650 acres
Dand	Number of farms	33	28
	Mean size	580 acres	620 acres
	Maximum size	1,600 acres	1,600 acres
	Minimum size	160 acres	320 acres
	Median size	650 acres	650 acres
	Modal size group	650 acres	350 acres
Coulter	Number of farms	42	37
	Mean size	588 acres	543 acres
	Maximum size	1,340 acres	1,428 acres
	Minimum size	160 acres	25 acres
	Median size	650 acres	550 acres
	Modal size group	650 acres	650 acres
Regent	Number of farms	49	40
	Mean size	496 acres	569 acres
	Maximum size	1,280 acres	1,520 acres
	Minimum size	160 acres	160 acres
	Median size	450 acres	450 acres
	Modal size group	350 acres	350 acres
Fairfax	Number of farms	63	65
	Mean size	635 acres	690 acres
	Maximum size	1,600 acres	1,670 acres
	Minimum size	160 acres	160 acres
	Median size	450 acres	650 acres
	Modal size group	450 acres	450 acres
Medora	Number of farms	102	104
	Mean size	551 acres	632 acres
	Maximum size	2,564 acres	3,524 acres
	Minimum size	5 acres	5 acres
	Median size	450 acres	650 acres
	Modal size group	350 acres	650 acres
Lyleton	Number of farms	114	107
	Mean size	595 acres	719 acres
	Maximum size	2,420 acres	2,300 acres
	Minimum size	160 acres	40 acres
	Median size	450 acres	650 acres
	Modal size group	350 acres	450 acres

TABLE 17. - AVERAGE ACREAGE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1966-67  
(continued)

Delivery Point		1962-63	1966-67
Goodlands	Number of farms	92	82
	Mean size	609 acres	674 acres
	Maximum size	4,160 acres	2,800 acres
	Minimum size	150 acres	160 acres
	Median size	450 acres	450 acres
	Modal size group	450 acres	450 acres
Lauder	Number of farms	64	47
	Mean size	675 acres	806 acres
	Maximum size	1,600 acres	2,160 acres
	Minimum size	80 acres	145 acres
	Median size	650 acres	750 acres
	Modal size group	650 acres	950 acres
Tilston	Number of farms	100	101
	Mean size	618 acres	671 acres
	Maximum size	1,600 acres	1,760 acres
	Minimum size	150 acres	145 acres
	Median size	650 acres	650 acres
	Modal size group	450 acres	650 acres
Napinka	Number of farms	74	62
	Mean size	632 acres	646 acres
	Maximum size	1,920 acres	2,240 acres
	Minimum size	154 acres	35 acres
	Median size	550 acres	550 acres
	Modal size group	450 acres	450 acres
Minto	Number of farms	101	88
	Mean size	513 acres	602 acres
	Maximum size	1,920 acres	1,920 acres
	Minimum size	80 acres	160 acres
	Median size	450 acres	550 acres
	Modal size group	350 acres, and 450 acres	650 acres
Elgin	Number of farms	78	80
	Mean size	629 acres	687 acres
	Maximum size	1,760 acres	1,920 acres
	Minimum size	160 acres	160 acres
	Median size	650 acres	650 acres
	Modal size group	650 acres	650 acres
Pierson	Number of farms	120	106
	Mean size	650 acres	727 acres
	Maximum size	2,180 acres	2,418 acres
	Minimum size	80 acres	130 acres
	Median size	650 acres	650 acres
	Modal size group	650 acres	650 acres

TABLE 17. - AVERAGE ACREAGE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1966-67  
(continued)

Delivery Point		1962-63	1966-67
Waskada	Number of farms	62	66
	Mean size	706 acres	716 acres
	Maximum size	1,600 acres	1,760 acres
	Minimum size	160 acres	160 acres
	Median size	650 acres	650 acres
	Modal size group	650 acres	650 acres
Hartney	Number of farms	136	133
	Mean size	666 acres	724 acres
	Maximum size	4,752 acres	4,423 acres
	Minimum size	83 acres	90 acres
	Median size	550 acres	650 acres
	Modal size group	350 acres	350 acres, and 450 acres
Deloraine	Number of farms	187	182
	Mean size	529 acres	574 acres
	Maximum size	1,942 acres	1,922 acres
	Minimum size	40 acres	55 acres
	Median size	450 acres	450 acres
	Modal size group	350 acres	350 acres
Melita	Number of farms	152	152
	Mean size	647 acres	712 acres
	Maximum size	2,560 acres	2,560 acres
	Minimum size	80 acres	40 acres
	Median size	650 acres	650 acres
	Modal size group	650 acres	650 acres
Boissevain	Number of farms	276	272
	Mean size	522 acres	562 acres
	Maximum size	1,474 acres	2,240 acres
	Minimum size	20 acres	20 acres
	Median size	450 acres	450 acres
	Modal size group	350 acres	450 acres

Source: Canadian Wheat Board, Winnipeg.

TABLE 18. - DISTRIBUTION OF GRAIN FARM SIZES IN THE STUDY AREA, CROP YEARS,  
1962-63 AND 1966-67

Size Group (acres)	1962-63		1966-67	
	No. of Farms	Per Cent of Total	No. of Farms	Per Cent of Total
1 - 100	12	0.6	17	0.9
101 - 200	150	7.2	126	6.6
201 - 300	44	2.1	35	1.8
301 - 400	443	21.2	344	17.9
401 - 500	412	19.7	324	16.8
501 - 600	63	3.0	64	3.3
601 - 700	409	19.6	368	19.1
701 - 800	209	10.0	195	10.1
801 - 900	25	1.2	59	3.1
901 - 1,000	124	5.9	140	7.3
1,001 - 1,100	21	1.0	17	0.9
1,101 - 1,200	66	3.2	72	3.7
1,201 - 1,300	43	2.1	65	3.7
1,301 - 1,400	7	0.3	21	1.1
1,401 - 1,500	17	0.8	24	1.2
1,501 - 1,600	15	0.7	18	1.0
1,601 - 1,700	3	0.1	8	0.4
1,701 - 1,800	8	0.4	6	0.3
1,801 - 1,900	-	-	-	-
1,901 - 2,000	6	0.3	6	0.3
2,001 and over	11	0.6	15	0.8
Total	2,088	100.0	1,924	100.0

Source: The Canadian Wheat Board, Winnipeg.



TABLE 19. — LAND TENURE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1966-67

Delivery Point	1962-63				1966-67					
	Acres owned	Acres rented	Total acres	% of acres owned	% of acres rented	Acres owned	Acres rented	Total acres	% of acres owned	% of acres rented
Croll	10,560	6,400	16,960	62.1	37.9	8,800	2,080	10,880	80.9	19.1
Dalny	21,816	5,511	27,327	79.8	20.2	21,796	4,699	26,495	82.3	17.7
Leighton	10,936	7,694	18,630	58.7	41.3	10,461	5,320	15,781	66.3	33.7
Cranmer	9,868	5,140	15,008	65.8	34.2	10,828	1,940	12,768	84.8	15.2
Elva	15,351	3,370	18,721	82.0	18.0	13,104	2,810	15,914	82.3	17.7
Hathaway	8,950	5,751	14,701	61.0	39.0	9,826	2,240	12,066	81.4	18.6
Underhill	6,380	2,240	8,620	74.0	26.0	closed				
Broomhill	20,185	5,150	25,335	79.7	20.3	17,520	2,984	20,504	85.4	14.6
Dand	8,430	10,556	18,986	44.3	55.7	10,286	7,080	17,366	59.2	40.8
Coulter	17,660	7,168	24,828	71.1	28.9	15,502	4,573	20,075	77.2	22.8
Regent	19,220	5,044	24,264	79.2	20.8	17,234	5,510	22,744	75.8	24.2
Fairfax	29,388	11,263	40,651	72.3	27.7	32,687	12,135	44,822	72.9	27.1
Medora	36,648	20,007	56,655	64.7	35.3	45,192	20,555	65,747	68.7	31.3
Lyleton	48,250	20,071	68,321	70.6	29.4	52,255	24,706	76,961	67.9	32.1
Goodlands	37,480	19,000	56,480	66.4	33.6	38,300	16,980	55,280	69.3	30.7
Lauder	31,745	11,474	43,219	73.4	26.6	27,048	10,845	37,893	71.4	28.6
Tilston	44,437	18,286	62,723	70.8	29.2	53,653	14,095	67,748	79.2	20.8
Napinka	32,613	14,774	47,387	68.8	31.2	29,124	10,939	40,063	72.7	27.3
Minto	29,339	23,207	52,546	55.9	44.1	36,029	16,967	52,996	68.0	32.0
Elgin	34,439	15,065	49,504	69.6	30.4	41,003	13,974	54,977	74.6	25.4
Pierson	60,852	17,755	78,607	77.4	22.6	63,428	13,658	77,086	82.3	17.7
Waskada	28,556	15,565	44,121	64.7	35.3	33,082	14,185	47,267	70.0	30.0
Hartney	70,365	20,178	90,543	77.7	22.3	72,606	23,660	96,266	75.4	24.6
Deloraine	54,415	44,083	98,498	55.2	44.8	65,926	38,561	104,487	63.1	36.9
Melita	63,670	35,412	99,082	64.3	35.7	75,632	32,616	108,248	69.9	30.1
Boissevain	99,880	45,582	145,462	68.7	31.3	111,895	41,082	152,977	73.1	26.9
Total	851,433	395,746	1,247,179	68.3	31.7	913,217	344,194	1,257,411	72.6	27.4

Source: Canadian Wheat Board, Winnipeg.

## Marketing of Grain in the Study Area

Why farmers deliver grain to a particular point is a question more complex than one might at first believe. Certainly the convenience of a close point is important. However, in this day of dependency upon other members of society for goods and services the delivery point may be becoming more than merely a place to deliver one's grain. A recent survey of grain producers undertaken by the Geographical Branch of the Department of Energy, Mines and Resources tends to point this out. Table 20 shows the results of that survey for this study area. There appears to be a tendency for those farmers that deliver to points which offer a variety of services to attach a degree of importance to those services. For example, those delivery points listed at the bottom of Table 20 (i.e., the larger centres) have a large proportion of affirmative replies on the questions regarding banking, business and shopping and attach less importance to shortest hauling distance than do the delivery points at the top. One might at first say that this is a logical assumption since facilities exist in some delivery points but not others. However, in looking at Table 28 which shows the average length of haul to various delivery points it becomes apparent that those points which offer many services are able to attract patronage from further away than those points that offer limited services. The larger delivery points, which are listed toward the bottom of Table 28, tend to have longer average hauling distances than the smaller delivery points listed towards the top. That the larger centres are able to attract patronage from greater distances is also displayed in the range of hauling distances.

The number of permit holders in the study area decreased from 2,088 in 1962-63 to 1,924 in 1966-67 (Table 21). The points with few services in the study area have lost patrons more rapidly than those points which have a large number of services. The largest points in the study area, Hartney, Deloraine, Melita and Boissevain, have remained relatively constant in terms of number of permit holders while the smallest points, Croll, Dalny and Leighton, have decreased by around 25 per cent during the period. All this would seem to indicate that most grain farmers in the study area are not only interested in the convenience of a grain elevator that is close at hand but also that they are interested in service centres which provide them with the type of business and social facilities that they want and are accordingly willing to travel a little farther.

Under the Canadian Wheat Board marketing system producers are paid an initial payment on delivery of their grain to the elevator. The payment is based on a value at the Lakehead, less the freight costs from the delivery point and less the country elevator handling charge. Tables 22(A) and 22(B) show the net initial payments for selected grades of wheat, oats and barley at the delivery points in the study area. It will be noted that, because of a lower freight rate, those producers delivering their grain to Minto and Boissevain receive a higher return than do all others. It could be expected that this higher payment per bushel would be an incentive for some specially located farmers to market their grain at these two points rather than at an elevator that might be somewhat closer to their farm.

For instance, those delivering wheat to Boissevain receive  $1\frac{1}{4}\text{¢}$  per bushel more than do farmers delivering to Deloraine, and  $\frac{1}{2}\text{¢}$  per bushel more

than Croll patrons. A reference to Figure 1 demonstrates that the Boissevain service area does indeed reach more than halfway to Deloraine and the same is true of Boissevain versus Croll service areas.

The number of elevators and the storage capacity at any particular point depicts the importance of that point as a grain collection and distribution centre. The number of elevators at a point is a rough approximation also of the degree of competition at a particular point. At points where there are two or more elevators one finds that generally more than one grain company is represented. The number of grain elevators and the capacity of any particular delivery point for 1962-63, 1966-67 and July 1968 is shown in Table 23. The points listed from Argue to Regent are generally quite small and lack competition in comparison with those points listed from Fairfax to Boissevain. Several of the points in the first mentioned group have been closed and none of the points have increased storage capacity. Several of the latter group and especially those listed from Pierson to Boissevain, have increased capacity substantially. Only Boissevain increased the number of grain elevators at a point, that being from 4 in 1962-63 to 5 in 1966-67. Over the time period shown, Medora had the largest increase in storage capacity, an increase of 125,000 bushels followed closely by Pierson with 124,000 bushels. The relative importance of the various points, as grain collection and distribution centres is readily displayed in Table 24. Boissevain is the only point that has received more than a million bushels in any given year. Other large receiving points in 1966-67 were Deloraine, Melita, Medora, Waskada, Elgin and Pierson. Looking at the classification of communities (Table 1) and the information in Table 24 one finds that the centres classified as villages, towns and greater towns are also the larger grain delivery points. This means that besides being major points for delivering grain these points also offer a variety of services for the producers. Those points which receive something less than 200,000 bushels of grain per year are mainly hamlets or points "too small to classify".

TABLE 20. - FACTORS GOVERNING GRAIN FARM OPERATORS' CHOICE OF DELIVERY POINT, 1966

Delivery Point	Best Road Access	Preference For Elevator Company	Shortest Hauling Distance	Good Shopping Facilities	Banking, Business Etc.	Other Reasons	Per Cent of Farm Operators Replying to Questionnaire
per cent of total replies in affirmative							
Leighton	20	0	100	0	0	0	17
Broomhill	14	14	71	0	0	0	24
Regent	20	20	100	0	0	20	13
Lyleton	34	54	69	17	17	8	31
Lauder	50	50	100	0	0	25	9
Minto	0	100	64	80	80	4	28
Pierson	50	62	88	25	50	0	8
Waskada	57	100	85	71	85	0	11
Boissevain	42	50	25	50	42	0	4
Total Area	44	61	69	38	38	6	12

Source: Prairie Farm Marketing Survey, Geographical Branch, Department of Energy, Mines and Resources, 1966, Ottawa.



TABLE 21. - DELIVERY PERMIT BOOKS ISSUED, BY DELIVERY POINT, 1962-63 to 1966-67

Delivery Point	1962-63	1963-64	1964-65	1965-66	1966-67
Croll	30	24	21	21	20
Dalny	37	32	30	25	28
Leighton	32	30	28	28	29
Cranmer	25	25	24	24	23
Elva	35	39	25	24	23
Hathaway	30	30	25	24	20
Underhill	15	14	14	10	-
Broomhill	39	36	35	32	29
Dand	33	28	26	25	28
Coulter	42	40	37	39	37
Regent	49	50	48	44	40
Fairfax	63	63	59	60	65
Medora	102	102	101	103	104
Lyleton	114	112	113	111	107
Goodlands	92	92	87	82	82
Lauder	64	58	59	54	47
Tilston	100	103	101	100	101
Napinka	74	68	63	62	62
Minto	101	101	98	95	88
Elgin	78	78	79	78	80
Pierson	120	108	103	108	106
Waskada	62	64	67	67	66
Hartney	136	137	131	134	133
Deloraine	187	185	187	183	182
Melita	152	157	165	160	152
Boissevain	275	279	275	273	272
Totals	2,088	2,055	2,001	1,966	1,924

Source: Canadian Wheat Board, Winnipeg.

TABLE 22A. — CANADIAN WHEAT BOARD NET INITIAL PAYMENTS TO PRODUCERS ("STREET PRICES"), CROP YEAR, 1967-68

Delivery Point	Grain <sup>a</sup> Freight Rates	Wheat				No. 1 Feed Oats	No. 3 C.W. 6 Row Barley	No. 1 Feed Barley
		No. 1 Northern and No. 1 C.W.A.D.	No. 2 Northern and No. 2 C.W.A.D.	No. 4 Northern and No. 4 C.W.A.D.	No. 2 C.W. Oats			
	¢/cwt.	dollars per bushel						
Croll	17	1.54-1/2	1.50-1/2	1.39-1/2	0.55-1/8	0.50-1/8	0.92-1/2	0.83-1/2
Dalry	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Leighton	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Cranmer	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Elva	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Hathaway	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Broomhill	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Dand	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Coulter	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Regent	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Fairfax	17	1.54-1/2	1.50-1/2	1.39-1/2	0.55-1/8	0.50-1/8	0.92-1/2	0.83-1/2
Medora	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Lyleton	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Goodlands	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Lauder	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Tilston	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Napinka	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Minto	16	1.55	1.51	1.40	0.55-1/2	0.50-1/2	0.93	0.84
Elgin	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Pierson	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Waskada	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Hartney	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Deloraine	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Melita	18	1.53-3/4	1.49-3/4	1.38-3/4	0.54-7/8	0.49-7/8	0.92	0.83
Boissevain	16	1.55	1.51	1.40	0.55-1/2	0.50-1/2	0.93	0.84

<sup>a</sup>Flaxseed and rapeseed 1 1/2 cent per hundredweight higher.

Source: Canadian Wheat Board, Winnipeg.

TABLE 22B. - CANADIAN WHEAT BOARD NET INITIAL PAYMENTS TO PRODUCERS ("STREET PRICES"), CROP YEAR 1968-69

Delivery Point	Grain <sup>a</sup> Freight Rates	Wheat				No. 2 C.W. Oats	No. 1 Feed Oats	No. 3 C.W. 6 Row Barley	No. 1 Feed Barley
		No. 1 Northern and No. 1 C.W.A.D.	No. 2 Northern and No. 2 C.W.A.D.	No. 4 Northern and No. 4 C.W.A.D.					
		dollars per bushel							
	¢/cwt.								
Croll	17	1.54-1/4	1.50-1/4	1.39-1/4	0.54-7/8	0.49-7/8	0.92-1/4	0.83-1/4	
Dalny	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Leighton	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Cranmer	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Hathawa	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Broomhill	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Dand	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Coulter	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Regent	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Fairfax	17	1.54-1/4	1.50-1/4	1.39-1/4	0.54-7/8	0.49-7/8	0.92-1/4	0.83-1/4	
Medora	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Lyleton	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Goodlands	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Lauder	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Tilston	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Napinka	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Minto	16	1.54-3/4	1.50-3/4	1.39-3/4	0.55-1/4	0.50-1/4	0.92-3/4	0.83-3/4	
Elgin	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Pierson	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Waskada	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Hartney	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Deloraine	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Melita	18	1.53-1/2	1.49-1/2	1.38-1/2	0.54-5/8	0.49-5/8	0.91-3/4	0.82-3/4	
Boissevain	16	1.54-3/4	1.50-3/4	1.39-3/4	0.55-1/4	0.50-1/4	0.92-3/4	0.83-3/4	

<sup>a</sup>Flaxseed and rapeseed 1 1/2 cent per hundredweight higher.

Source: Canadian Wheat Board, Winnipeg.

TABLE 23. - NUMBER AND CAPACITY OF LICENSED ELEVATORS AT SPECIFIED GRAIN  
DELIVERY POINTS, 1962-63, 1966-67, AND JULY 1968

Delivery Point	Number of Elevators			Storage Capacity		
	1962-63	1966-67	July 1968	1962-63	1966-67	July 1968
	number			'000 bushels		
Argue	1	not licensed		35	not licensed	
Cameron (Storage only)	1	1	1	38	38	38
Croll	1	1	1	78	78	78
Dalny	2	2	2	161	161	161
Leighton	1	1	1	51	51	51
Orthez	1	not licensed		28	not licensed	
Cranmer	2	2	2	84	84	84
Elva	2	2	not licensed	47	47	not licensed
Hathaway	1	1	1	27	27	27
Underhill	1	not licensed		36	not licensed	
Broomhill	1	1	1	24	24	24
Dand	1	1	1	58	58	58
Coulter	1	1	1	50	50	50
Regent	1	1	1	88	88	88
Fairfax	3	3	3	232	204	240
Medora	2	2	2	183	236	308
Lyleton	2	2	2	168	168	199
Goodlands	3	3	3	244	243	243
Lauder	2	2	2	95	95	95
Tilston	3	3	2	189	189	164
Napinka	2	2	2	121	121	121
Minto	3	3	3	270	296	296
Elgin	3	3	3	235	236	268
Pierson	3	3	3	147	227	271
Waskada	3	3	3	195	275	275
Hartney	2	3	3	112	217	217
Deloraine	4	4	4	376	376	376
Melita	3	3	3	271	301	301
Boissevain	4	5	5	445	495	560

Source: Board of Grain Commissioners, Winnipeg.



TABLE 24. - RECEIPTS OF GRAIN AT LICENSED ELEVATORS AT SPECIFIED POINTS,  
1960-61 to 1966-67

Delivery Point	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67
	bushels						
Argue	43,180	48,514	-	-	-	-	-
Croll	114,292	94,414	151,872	100,055	113,282	121,058	103,223
Dalny	184,853	116,796	330,285	261,033	227,685	270,077	262,847
Leighton	123,988	100,174	226,023	171,728	183,068	209,521	184,321
Orthez	55,164	-	-	-	-	-	-
Cranmer	146,364	80,233	213,997	140,533	147,252	164,004	145,529
Elva	64,935	13,777	146,614	79,637	85,043	101,637	88,567
Hathaway	82,988	66,302	144,208	108,768	120,028	137,807	106,859
Underhill	53,151	35,124	72,445	60,289	73,198	27,403	-
Broomhill	78,822	36,801	166,824	104,017	112,624	124,322	107,190
Dand	103,837	65,930	180,022	108,418	133,146	130,589	140,294
Coulter	84,196	22,098	226,970	138,667	137,746	145,699	140,069
Regent	176,634	140,943	255,149	201,889	233,385	247,755	231,411
Fairfax	312,574	238,445	275,127	332,985	375,245	383,797	483,949
Medora	413,830	291,878	657,550	526,811	601,597	676,718	663,233
Lyleton	291,518	88,727	633,669	473,551	448,162	557,634	522,336
Goodlands	316,943	202,157	551,897	435,476	424,985	518,247	518,164
Lauder	190,767	135,417	291,239	185,360	210,015	228,854	196,323
Tilston	228,689	87,570	513,894	334,380	378,672	440,529	428,433
Napinka	177,805	74,666	286,702	210,050	230,284	245,795	216,364
Minto	351,617	291,208	375,520	356,142	411,077	475,353	486,046
Elgin	380,936	311,746	347,964	440,167	539,353	625,501	556,205
Pierson	286,326	115,095	650,175	434,241	397,502	592,929	533,632
Waskada	395,650	226,923	585,035	504,900	455,596	619,840	578,105
Hartney	363,378	215,228	468,485	407,567	475,216	553,133	521,169
Deloraine	432,767	431,907	931,770	689,591	789,848	794,042	859,931
Melita	401,731	178,079	824,226	621,454	643,030	800,531	756,464
Boissevain	640,259	645,907	1,112,170	964,198	1,115,454	1,261,231	1,302,070
TOTAL	6,497,194	4,356,059	10,619,832	8,391,907	9,062,493	10,454,006	10,132,734

Source: Board of Grain Commissioners, Winnipeg.

### Specified Acreage for Delivery Quota Purposes

Specified acreage reported to the Canadian Wheat Board by delivery permit applicants generally refers to that proportion of total farm land which is seeded to cereal crops. While it includes summerfallow and forage crops and excludes oilseed crops, it is nevertheless a good indicator of the amount of grain producing land tributary to a given delivery point (Table 25(A)). In conjunction with the Canadian Wheat Board's delivery quota system, it also provides fairly reliable information on the magnitude of demand for elevator space at delivery points, inasmuch as the number of specified acres denotes the number of bushels that are eligible to be delivered at each quota increase.

For the study area as a whole, specified acreage increased by 8 per cent between 1960-61 and 1967-68. Of the twelve delivery points open in 1960-61 and designated either as hamlets or "too small to classify", three were closed by 1967-68 with the remainder reporting decreased specified acreage. The decreases ranged from a low of two per cent at Dalny to a high of 41 per cent at Croll. Hathaway experienced a 30 per cent drop, while Leighton, Cranmer, Broomhill and Regent all reported decreased specified acreage in excess of 20 per cent. Dand and Coulter experienced more moderate declines of 10 and 17 per cent respectively. The three delivery points closed during this period were Orthez, Underhill and Elva. Three of the nine villages in the area reported decreases in specified acreage. These were Minto, Lauder and Napinka, which declined by 4, 17 and 27 per cent respectively. Of those villages reporting increases in specified acreage, Goodlands showed the smallest with 4.5 per cent while Medora topped the list by increasing its specified acreage by 26 per cent. The remaining village delivery points of Fairfax, Lyleton, Tilston and Elgin increased specified acreage from 10 to 15 per cent. The increases at the towns of Pierson and Waskada were 23 and 5 per cent respectively. Of the greater towns in the area, Boissevain and Deloraine showed acreage increases of 46 and 60 per cent respectively. Melita increased by close to a third while Hartney experienced only a moderate growth of 10 per cent.

A point of interest is the fact that almost half (47.7 per cent) the total specified acreage in the study area in 1967-68 was tributary to grain elevators at the areas six largest communities.

In Table 25(B) the ratio of storage capacity to specified acreage shows what quota, in bushels per acre, would be necessary to completely fill an empty delivery point. For example, in Croll a quota of approximately nine bushels per specified acre could completely fill all available storage space at that point.

The lower the ratio the greater the demand for space at a delivery point. If a supplementary five bushel quota were applied to the entire study area, and assuming that all elevators were empty, and no grain moved out, Boissevain would be completely filled while Croll would be less than three-quarters filled. As the Wheat Board attempts to equalize quotas between producers, Boissevain is able to maintain a larger through-put ratio relative to Croll. In essence, relative to the grain marketing conditions prevailing at Boissevain, Croll is a storage centre. Alternatively, Boissevain is a grain shipping centre. On the other hand Melita with a ratio of 3.7 could not accommodate all the grain delivered on the basis of 5 bushels per specified acre unless 107,000 bushels were loaded out.

Although the ratios at Boissevain and Croll have been steadily rising since 1960, the reason for each increase is quite different. At Croll the specified acreage has been declining steadily while the capacity has remained constant resulting in an increasing ratio. At Boissevain, both the specified acreage and the capacity have been generally rising since 1960. However, capacity has been increasing at a faster rate than specified acreage giving rise to an increased ratio.

The last column in Table 25(B) shows the number of railway boxcars needed to move a one bushel per specified acre amount of grain out of the delivery points. The larger the number of boxcars the more important is that delivery point as a grain shipping centre.

The number of boxcars that may be placed on track at the elevator siding for each point is shown in Table 26. Generally speaking, the larger the point with respect to number of elevators and total capacity, the more boxcar space there is available.

Table 27 shows the estimated number of farm trucks by size of farm and by size of truck. These estimates were obtained by using results of a survey conducted by the Department of Energy, Mines and Resources, which yielded proportions by size of truck and by number of truck by size of farm. These proportions were applied to the 1966 census for the area. For the study area as a whole, there is approximately one truck per farm, and the most popular sizes of farm trucks are the one-ton and two-ton.

Table 28 shows the average mileage, and the range of hauling distances for grain farmers at delivery points in the study area. A readily apparent point in the table is that the larger centres not only attract more patronage but also that producers travel greater distances to use the services in these communities. The average mileage for farmers hauling to the greater towns of Hartney, Deloraine, Melita and Boissevain is greater than for the other groupings of communities.

TABLE 25A. - CANADIAN WHEAT BOARD SPECIFIED ACREAGE FOR DELIVERY QUOTA PURPOSES, BY DELIVERY POINT,  
1960-61 to 1967-68

Delivery Point	1960-61	1961-62 <sup>1</sup>	1962-63 <sup>1</sup>	1963-64	1964-65	1965-66	1966-67	1967-68 <sup>2</sup>	% Change 1960-61-1967-68
Argue	Not licensed								
Cameron	Storage only								
Croll	14,815	13,747	13,154	10,223	8,941	8,043	7,788	8,761	- 40.9
Dalny	17,118	15,725	17,153	16,200	16,908	14,337	16,179	16,741	- 2.2
Leighton	13,861	15,683	15,718	14,588	13,832	14,479	12,758	10,092	- 27.2
Orthez	6,111	-	-	-	-	-	-	-	-
Cranmer	13,755	11,275	11,520	11,160	10,419	10,867	10,090	10,635	- 22.7
Elva	13,351	13,603	11,776	12,015	8,972	8,459	9,370	-	-
Hathaway	11,139	10,874	11,253	11,295	10,493	9,901	8,547	7,709	- 30.8
Underhill	5,974	5,426	5,948	5,913	5,958	3,760	-	-	-
Broomhill	16,614	15,789	16,705	16,340	16,351	13,945	12,520	12,812	- 22.9
Dand	14,602	14,230	13,512	12,681	12,179	11,686	11,929	13,141	- 10.0
Coulter	15,251	14,937	15,042	12,841	12,557	12,838	11,656	12,658	- 17.0
Regent	21,157	20,588	20,912	21,119	20,971	18,867	16,537	16,830	- 20.5
Fairfax	30,395	29,957	31,297	31,950	30,082	30,867	32,178	33,666	+ 10.8
Medora	47,671	47,141	47,432	51,413	52,010	53,100	54,114	59,834	+ 25.5
Lyleton	45,159	44,718	47,777	47,951	49,004	46,065	46,798	51,497	+ 14.8
Goodlands	38,773	36,434	37,517	40,869	37,174	36,083	37,987	40,511	+ 4.5
Lauder	26,129	26,746	25,542	22,883	22,879	21,361	20,239	21,656	- 17.1
Tilston	43,579	43,979	43,635	44,715	45,833	46,250	48,064	49,918	+ 14.5
Napinka	35,575	31,801	31,383	30,376	27,621	25,323	24,935	26,146	- 26.5
Minto	39,190	40,135	40,066	40,915	39,676	37,708	38,515	37,708	- 3.8
Elgin	38,642	38,688	38,901	41,093	39,469	39,244	40,838	43,800	+ 13.3
Pierson	51,842	50,448	54,127	49,402	46,058	52,585	52,297	53,758	+ 23.0
Waskada	37,549	33,372	33,276	36,286	37,064	35,639	34,859	39,279	+ 4.6
Hartney	53,183	52,625	54,734	55,495	53,785	54,950	54,783	58,615	+ 10.2
Deloraine	48,300	72,389	71,619	71,838	72,028	70,326	71,857	77,124	+ 59.7
Melita	61,866	64,660	63,822	65,579	67,965	68,907	69,928	82,015	+ 32.6
Boissevain	76,388	100,472	100,572	106,423	104,135	103,414	103,658	111,757	+ 46.3
Total	837,989	865,442	874,493	881,563	862,364	849,004	848,424	906,663	+ 8.2

<sup>1</sup>Durum excluded from specified acreage

<sup>2</sup>Permits issued to November 21, 1967

Source: Canadian Wheat Board, Winnipeg.



TABLE 25B. - QUOTA IN BUSHEL PER SPECIFIED ACRE NECESSARY TO FILL STORAGE CAPACITY OF DELIVERY POINTS, WITH AN ASSUMED ZERO INVENTORY LEVEL

Delivery Point	Specified Acres as at November 21, 1967	Capacity in Bushels July 1968	Ratio of Capacity to Specified Acres	Number of Boxcars to Move a One Bushel Quota <sup>1</sup>
Argue	Not licensed	-	-	-
Cameron	Storage only	-	-	-
Croll	8,761	77,500	8.8	5
Dalny	16,741	161,200	9.6	9
Leighton	10,092	50,500	5.0	5
Orthez	Not licensed	-	-	-
Cranmer	10,635	84,000	7.9	6
Elva	Not licensed	-	-	-
Hathaway	7,709	26,600	3.5	4
Underhill	Not licensed	-	-	-
Broomhill	12,812	24,000	1.9	7
Dand	13,141	57,500	4.4	7
Coulter	12,658	50,000	4.0	7
Regent	16,830	88,200	5.2	9
Fairfax	33,666	240,200	7.1	17
Medora	59,834	308,200	5.2	30
Lyleton	51,947	199,100	3.8	26
Goodlands	40,511	243,400	6.0	21
Lauder	21,656	94,700	4.4	11
Tilston	49,918	163,700	3.3	25
Napinka	26,146	120,500	4.6	14
Minto	37,708	296,200	7.9	19
Elgin	43,800	267,500	6.1	22
Pierson	63,758	271,300	4.3	32
Waskada	39,279	274,600	7.0	20
Hartney	58,615	216,900	3.7	30
Deloraine	77,124	375,500	4.9	39
Melita	82,015	301,000	3.7	41
Boissevain	111,757	560,100	5.0	56

<sup>1</sup> Assume 2,000 bushels per boxcar.

TABLE 26. - MAXIMUM NUMBER OF BOX-CARS THAT CAN BE HANDLED IN ONE SHUNT BY SPECIFIED COUNTRY ELEVATORS IN THE STUDY AREA, JULY 1968

Delivery Point	Number of Cars Per Point	Elevator Company	Number of Cars Per Elevator Comp.
Cameron	5	Manitoba Pool Elevators	5
Croll	6	Manitoba Pool Elevators	6
Dalny	11	Manitoba Pool Elevators	11
Leighton	6	Manitoba Pool Elevators	6
Cranmer	8	United Grain Growers	8
Hathaway	5	Manitoba Pool Elevators	5
Broomhill	10	Manitoba Pool Elevators	10
Dand	10	Manitoba Pool Elevators	10
Coulter	8	Manitoba Pool Elevators	8
Regent	7	Manitoba Pool Elevators	7
Fairfax	13	Manitoba Pool Elevators	6
		N.M. Patterson & Sons Ltd.	3
		United Grain Growers	4
Medora	18	Manitoba Pool Elevators	9
		United Grain Growers	9
Lyleton	9	Manitoba Pool Elevators	4
		N.M. Patterson & Sons Ltd.	5
Goodlands	14	Federal Grains Ltd.	3
		Manitoba Pool Elevators	11
Lauder	8	Manitoba Pool Elevators	8
Tilston	12	Manitoba Pool Elevators	12
Napinka	15	Manitoba Pool Elevators	15
Minto	18	Manitoba Pool Elevators	4
		N.M. Patterson & Sons Ltd.	10
		United Grain Growers	4
Elgin	23	Manitoba Pool Elevators	10
		N.M. Patterson & Sons Ltd.	8
		United Grain Growers	5
Pierson	15	Manitoba Pool Elevators	9
		N.M. Patterson & Sons Ltd.	6
Waskada	22	Manitoba Pool Elevators	11
		N.M. Patterson & Sons Ltd.	11
Hartney	21	Manitoba Pool Elevators	5
		United Grain Growers	16
Deloraine	17	Federal Grain Ltd.	5
		Manitoba Pool Elevators	8
		United Grain Growers	4
Melita	12	Manitoba Pool Elevators	9
		United Grain Growers	3
Boissevain	20	Manitoba Pool Elevators	6
		Parrish & Heimbecker Ltd.	3
		N.M. Patterson & Sons Ltd.	4
		United Grain Growers	7

Source: Grain Elevator Companies

TABLE 27. - ESTIMATED NUMBER OF FARM TRUCKS ON GRAIN FARMS IN THE STUDY AREA,  
BY SIZE OF FARM AND BY SIZE OF TRUCK, 1966

A) By Size of Farm

<i>Size Group (Acres)</i>	<i>Number of Trucks on Farms</i>
1 - 200 .....	145
201 - 400 .....	400
401 - 600 .....	405
601 - 800 .....	575
801 - 1,000 .....	210
1,001 - 1,200 .....	90
1,201 - 1,400 .....	95
1,401 - 1,600 .....	45
1,601 - 1,800 .....	15
1,801 - 2,000 .....	5
2,001 and over .....	15
Total .....	2,000

B) By Size of Truck

<i>Size of Truck in Ton Capacity</i>	<i>Number of Trucks</i>
$\frac{1}{2}$ .....	200
$\frac{3}{4}$ .....	90
1 .....	640
$1\frac{1}{2}$ .....	180
2 .....	555
$2\frac{1}{2}$ .....	30
3 .....	285
Over 3 .....	20
Total .....	2,000

TABLE 28. - FARM TO ELEVATOR HAULING DISTANCES, BY DELIVERY POINT, 1962-63

Delivery Point	Number of Farms	Hauling Distance			Average Mileage
		High	Low	Range	
		Miles			
Croll	30	7.25	0.50	6.75	3.67
Dalny	37	9.00	1.75	7.25	5.05
Leighton	32	7.75	0.25	7.50	3.34
Cranmer	25	10.50	1.50	9.00	4.46
Elva	35	8.25	1.00	7.25	4.15
Hathaway	30	7.75	0.75	7.00	3.39
Underhill	15	6.50	1.00	5.50	3.43
Broomhill	39	14.30	1.50	12.80	5.94
Dand	33	6.75	1.00	5.75	3.55
Coulter	42	7.00	1.00	6.00	4.13
Regent	49	8.00	0.50	7.50	3.93
Fairfax	63	10.75	0.50	10.25	4.63
Medora	102	12.10	0.25	11.85	5.74
Lyleton	114	15.65	0.25	15.40	6.67
Goodlands	92	15.65	0.75	14.90	5.50
Lauder	64	13.35	0.35	13.00	5.33
Tilston	100	11.50	1.00	10.50	5.32
Napinka	74	13.00	1.00	12.00	5.80
Minto	101	11.25	0.75	10.50	5.07
Elgin	78	9.25	0.75	8.50	4.88
Pierson	120	13.80	1.00	12.80	5.94
Waskada	62	17.75	1.00	16.75	5.04
Hartney	136	15.75	0.75	15.00	6.84
Deloraine	187	18.00	0.50	17.50	7.61
Melita	152	14.00	0.75	13.25	7.45
Boissevain	276	20.00	1.00	19.00	8.95
Study Area	2,088	20.00	0.25	19.75	6.15



## Rationalization of Grain Delivery Points

The preceding sections of the report have dealt with the economic makeup of the communities in this area. This last section will deal with how far producers would have to travel as well as how much grain would probably have to be handled by alternate delivery points if certain elevators were closed.

For this purpose the basis for diverting producers from one delivery point to another is least distance by good roads. Although other factors, such as shopping facilities may be important, these would invariably involve value judgements on the part of the researchers and hence were not considered.

As a check on our method of diverting producers from one delivery point to another, we examined Canadian Wheat Board permits for the crop year 1968-69, to determine where those producers who held 1967-68 Elva permits are presently delivering. At the time of Elva's closing (September 1967) there were 24 producers holding Elva delivery permits. Of these, 11 (46 per cent) chose to deliver to Melita and 13 chose Pierson. In this report we assumed Elva was closed in 1962. In 1962 there were 35 producers with Elva delivery permits. By our method of diverting producers (least distance by good roads), 16 (46 per cent) were diverted to Melita and 19 to Pierson. In both cases the proportion of producers diverted from Elva to Melita was 46 per cent. It would appear that our method of diverting producers closely resembles the method by which producers actually choose a new point upon closure of their previous delivery point. Figures 1-4 show the original elevator hinterlands (1962-63) as well as how the hinterlands might change if various delivery points were closed.

In Tables 29 to 31, we attempt to show how much grain would have to be handled by alternate delivery points if certain points were closed. The method employed to divert grain is on the basis of the relative proportions of total farm land being diverted. As an example, assume delivery point A was to be closed and its nearest diversion points are B and C. Further, assume that 75 per cent of the farm land tributary to A is diverted to B and 25 per cent to C. These proportions are then applied to the actual amount of grain delivered to point A for any given year. The base for all calculations is the Canadian Wheat Board permits for 1962-63.

In Table 29 it is assumed that Dand, Hathaway, Regent, Croll, Underhill and Elva were closed. Underhill was actually closed for grain deliveries in 1966-67, and as it could not be used as a diversion point for all years it was treated as though it had closed for the entire time period. Elva was closed in 1967-68 and was also assumed closed for the entire period. If these six points had been closed, Elgin would have become the major diversion point receiving an estimated additional 264,261 bushels of grain for the crop year 1966-67. Deloraine would be the second important diversion point, receiving an estimated additional 121,235 bushels of grain in 1966-67. These figures are shown under the columns Elgin and Deloraine in the last row at the bottom of Table 29 for the crop year 1966-67.

Table 32 shows through-put ratios for the crop years 1962-63 and 1966-67 for the delivery points before and after any points have been assumed closed. As mentioned above, for the first set of closed stations, Elgin and Deloraine became the two most important diversion points. The impact of the diversions on these alternate delivery points is shown in Table 32. In 1962-63 Elgin had a ratio of 1.48 before diversion and 3.17 after the hypothetical diversions took place. In 1966-67 Elgin had a ratio

of 2.08 before diversion and 3.07 after diversion. Deloraine, for 1962-63 had a ratio of 2.48 before diversion and 2.89 after, while in 1966-67 the ratios were 2.29 and 2.61 respectively.

Table 30 shows the potential diversion of grain if (in addition to the previous six mentioned points), Fairfax, Elgin, Minto, Lyleton, Coulter and Dalny were closed. For this set of hypothetical diversions Boissevain is the alternate delivery point that becomes the most important, as in 1966-67, 648,091 bushels of grain are diverted there. The diversion to Boissevain would have increased the through-put ratio from 2.50 to 3.76 in 1962-63 and from 2.32 to 3.48 in 1966-67 (Table 32).

Table 31 shows the potential diversions of grain if (in addition to those delivery points shown in Tables 29 and 30), Waskada, Cranmer, Goodlands, Tilston and Broomhill were also closed. Here, Pierson and Medora would become the major diversion points. The diversion to Medora would have increased the through-put from 3.60 to 7.63 in 1962-63 and from 2.15 to 4.31 in 1966-67. The diversions to Pierson would have increased the through-put ratio from 4.42 to 10.15 in 1962-63 and from 2.39 to 5.41 in 1966-67.

The closing of delivery points in the study area has several important aspects which are not examined in this report. Can the grain elevators at the centres assumed in this report to be diversion points handle the extra grain that may be delivered to them? The delivery point Leighton, as shown in Table 32, after all diversions were made would have had an increase of through-put ratio from 4.47 to 11.31 in 1962-63 and from 3.65 to 9.82 in 1966-67. With such an increase in the through-put ratio would this cause any difficulty for producers attempting to deliver grain to such a point? Although the study cannot answer such questions, it does attempt to show potential amounts of grain diversion and thereby disclose delivery points where increases in storage capacity might be needed or where major renovations should be carried out by the grain companies.

An important impact of the closing down of any grain delivery points is the increased length of haul that would have to be undertaken by those producers who delivered to a point that was to be closed. This effect is shown in Tables 33(A) and (B). Table 33(A) shows the average length of haul in 1962-63 for farmers, delivering to points, that were assumed closed in this study. It also shows how far they would have to travel to an alternate point if their current (1962-63) delivery points were closed. Table 33(B) shows the average haul, for 1962-63, for the alternate delivery points and the increased size of their hinterlands after the specified points have been assumed closed.

The producers who delivered to Dand in 1962-63 hauled an average of 3.55 miles. After Dand is assumed closed these producers would travel an average of 9.02 miles or 5.47 miles more than before Dand was closed (Table 33(A)). Table 29 assumes that the Dand farmers would now deliver to Hartney, Lauder, Leighton and Deloraine as these are the nearest alternate delivery points. In Fairfax the average length of haul in 1962-63 prior to any points being assumed closed was 4.63 miles. If Dand, Hathaway, Regent and Croll were closed the average hauling distance to Fairfax would increase to 5.17 miles or by 0.54 miles (Table 33(B)). This is due to the diversion of Croll producers to Fairfax (Table 29). Information on other points in the study area may be likewise obtained by following through Tables 29 to 33.

TABLE 29. - PROBABLE ADDITIONAL THROUGH-PUT AT ALTERNATIVE 1 DELIVERY POINTS IF SPECIFIED DELIVERY POINT HAD BEEN CLOSED, 1960-61 TO 1966-67

Specified Points		Hartney	Elgin	Fairfax	Minto	Alternative 1 Delivery Points					Pierson	Melita
						Lauder	Boissevain	Leighton	Deloraine			
										bushels		
Dand	1960-61	27,828	-	-	-	31,463	-	21,805	22,741	-	-	-
	1961-62	17,669	-	-	-	19,977	-	13,845	14,439	-	-	-
	1962-63	48,246	-	-	-	54,547	-	37,805	39,424	-	-	-
	1963-64	29,056	-	-	-	32,851	-	22,768	23,743	-	-	-
	1964-65	35,682	-	-	-	40,343	-	27,961	29,160	-	-	-
	1965-66	34,998	-	-	-	39,568	-	27,424	28,599	-	-	-
	1966-67	37,599	-	-	-	42,509	-	29,462	30,724	-	-	-
Hathaway	1960-61	14,439	24,316	-	-	-	-	-	44,233	-	-	-
	1961-62	11,536	19,427	-	-	-	-	-	35,339	-	-	-
	1962-63	25,092	42,253	-	-	-	-	-	76,863	-	-	-
	1963-64	18,926	31,869	-	-	-	-	-	57,973	-	-	-
	1964-65	20,884	35,168	-	-	-	-	-	63,974	-	-	-
	1965-66	23,978	40,377	-	-	-	-	-	73,452	-	-	-
	1966-67	18,593	31,310	-	-	-	-	-	56,956	-	-	-
Regent	1960-61	-	151,022	-	-	-	-	-	25,612	-	-	-
	1961-62	-	120,506	-	-	-	-	-	20,437	-	-	-
	1962-63	-	218,152	-	-	-	-	-	36,997	-	-	-
	1963-64	-	172,615	-	-	-	-	-	29,274	-	-	-
	1964-65	-	199,544	-	-	-	-	-	33,841	-	-	-
	1965-66	-	211,831	-	-	-	-	-	35,924	-	-	-
	1966-67	-	197,856	-	-	-	-	-	33,555	-	-	-
Croll	1960-61	-	38,859	40,002	10,743	-	24,688	-	-	-	-	-
	1961-62	-	32,101	33,044	8,875	-	20,394	-	-	-	-	-
	1962-63	-	51,637	53,155	14,276	-	32,804	-	-	-	-	-
	1963-64	-	34,019	35,019	9,405	-	21,612	-	-	-	-	-
	1964-65	-	38,516	39,649	10,649	-	24,468	-	-	-	-	-
	1965-66	-	41,159	42,371	11,379	-	26,149	-	-	-	-	-
	1966-67	-	35,095	36,128	9,702	-	22,298	-	-	-	-	-

(continued)

TABLE 29. - PROBABLE ADDITIONAL THROUGH-PUT AT ALTERNATIVE<sup>1</sup> DELIVERY POINTS IF SPECIFIED DELIVERY POINT HAD BEEN CLOSED, 1960-61 TO 1966-67 (continued)

Specified Points		Hartney	Elgin	Fairfax	Minto	Alternative <sup>1</sup> Delivery Points					Pierson	Melita
						Lauder	Boissevain	Leighton	Deloraine			
										bushels		
Elva	1960-61	—	—	—	—	—	—	—	—	—	37,597	27,597
	1961-62	—	—	—	—	—	—	—	—	—	7,922	5,855
	1962-63	—	—	—	—	—	—	—	—	—	84,273	62,341
	1963-64	—	—	—	—	—	—	—	—	—	45,775	33,862
	1964-65	—	—	—	—	—	—	—	—	—	48,882	36,161
	1965-66	—	—	—	—	—	—	—	—	—	58,421	43,216
	1966-67	—	—	—	—	—	—	—	—	—	50,908	37,659
Underhill	1960-61	10,843	42,308	—	—	—	—	—	—	—	—	—
	1961-62	7,165	27,959	—	—	—	—	—	—	—	—	—
	1962-63	14,778	57,667	—	—	—	—	—	—	—	—	—
	1963-64	12,299	47,990	—	—	—	—	—	—	—	—	—
	1964-65	14,932	58,266	—	—	—	—	—	—	—	—	—
	1965-66	5,590	21,813	—	—	—	—	—	—	—	—	—
	1966-67	—	—	—	—	—	—	—	—	—	—	—
All Six Points	1960-61	53,110	256,505	40,002	10,743	31,463	24,688	21,805	92,586	37,597	27,597	27,597
	1961-62	36,370	199,993	33,044	8,875	19,977	20,394	13,845	70,215	7,922	5,855	5,855
	1962-63	88,116	369,709	53,155	14,276	54,547	32,804	37,805	153,284	84,273	62,341	62,341
	1963-64	60,281	286,493	35,019	9,405	32,851	21,612	22,768	110,990	45,775	33,862	33,862
	1964-65	71,498	331,494	39,649	10,649	40,343	24,468	27,961	126,975	48,882	36,161	36,161
	1965-66	64,566	315,180	42,371	11,379	39,568	26,149	27,424	137,975	58,421	43,216	43,216
	1966-67	56,192	264,261	36,128	9,702	42,509	22,298	29,462	121,235	50,908	37,659	37,659

<sup>1</sup>Nearest delivery point to farm, via good roads; all else assumed unchanged



TABLE 30. - PROBABLE ADDITIONAL THROUGH-PUT AT ALTERNATIVE 1 DELIVERY POINTS IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED, 1960-61 TO 1966-67

Specified Points	Alternative <sup>1</sup> Delivery Points												
	Souris	Carroll	Nesbitt	Menteith	Hartney	Lauder	Gainsborough	Pierson	Melita	Leighton	Deloraine	Boissevain	Waskoda
							bushels						
Dand	1960-61	-	-	-	27,828	31,462	-	-	-	21,806	22,740	-	-
	1961-62	-	-	-	17,669	19,977	-	-	-	13,845	14,439	-	-
	1962-63	-	-	-	48,246	54,547	-	-	-	37,805	39,424	-	-
	1963-64	-	-	-	29,056	32,851	-	-	-	22,768	23,743	-	-
	1964-65	-	-	-	35,682	40,343	-	-	-	27,961	29,160	-	-
	1965-66	-	-	-	34,998	39,568	-	-	-	27,424	28,599	-	-
	1966-67	-	-	-	37,599	42,509	-	-	-	29,462	30,724	-	-
Hathaway	1960-61	-	-	-	23,486	-	-	-	-	-	59,502	-	-
	1961-62	-	-	-	18,764	-	-	-	-	-	47,538	-	-
	1962-63	-	-	-	40,811	-	-	-	-	-	103,397	-	-
	1963-64	-	-	-	30,781	-	-	-	-	-	77,987	-	-
	1964-65	-	-	-	33,968	-	-	-	-	-	86,060	-	-
	1965-66	-	-	-	38,999	-	-	-	-	-	98,808	-	-
	1966-67	-	-	-	30,241	-	-	-	-	-	76,618	-	-
Regent	1960-61	-	-	-	-	-	-	-	-	-	124,350	52,284	-
	1961-62	-	-	-	-	-	-	-	-	-	99,224	41,719	-
	1962-63	-	-	-	-	-	-	-	-	-	179,625	75,524	-
	1963-64	-	-	-	-	-	-	-	-	-	142,130	59,759	-
	1964-65	-	-	-	-	-	-	-	-	-	164,303	69,082	-
	1965-66	-	-	-	-	-	-	-	-	-	174,420	73,335	-
	1966-67	-	-	-	-	-	-	-	-	-	162,913	68,498	-
Croll	1960-61	-	-	-	-	-	-	-	-	-	-	114,292	-
	1961-62	-	-	-	-	-	-	-	-	-	-	94,414	-
	1962-63	-	-	-	-	-	-	-	-	-	-	151,872	-
	1963-64	-	-	-	-	-	-	-	-	-	-	100,055	-
	1964-65	-	-	-	-	-	-	-	-	-	-	113,282	-
	1965-66	-	-	-	-	-	-	-	-	-	-	121,058	-
	1966-67	-	-	-	-	-	-	-	-	-	-	103,223	-
Elva	1960-61	-	-	-	-	-	-	37,597	27,597	-	-	-	-
	1961-62	-	-	-	-	-	-	7,922	5,855	-	-	-	-
	1962-63	-	-	-	-	-	-	84,273	62,341	-	-	-	-
	1963-64	-	-	-	-	-	-	45,775	33,862	-	-	-	-
	1964-65	-	-	-	-	-	-	48,882	36,161	-	-	-	-
	1965-66	-	-	-	-	-	-	58,421	43,216	-	-	-	-
	1966-67	-	-	-	-	-	-	50,908	37,659	-	-	-	-

(continued)



TABLE 30. - PROBABLE ADDITIONAL THROUGH-PUT AT ALTERNATIVE<sup>1</sup> DELIVERY POINTS IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED, 1960-61 TO 1966-67 (continued)

Specified Points	Alternative <sup>1</sup> Delivery Points										
	Souris	Carroll	Nesbitt	Menteith	Hartney	Lauder	Gainsborough	Pierson	Melita	Leighton	Boissevain
											Waskada
bushels											
Underhill	1960-61	-	-	-	53,151	-	-	-	-	-	-
	1961-62	-	-	-	35,124	-	-	-	-	-	-
	1962-63	-	-	-	72,445	-	-	-	-	-	-
	1963-64	-	-	-	60,289	-	-	-	-	-	-
	1964-65	-	-	-	73,198	-	-	-	-	-	-
	1965-66	-	-	-	27,403	-	-	-	-	-	-
	1966-67	-	-	-	-	-	-	-	-	-	-
Fairfax	1960-61	53,138	161,288	-	-	-	-	-	-	-	98,148
	1961-62	40,536	123,038	-	-	-	-	-	-	-	74,871
	1962-63	46,772	141,965	-	-	-	-	-	-	-	86,390
	1963-64	56,607	171,820	-	-	-	-	-	-	-	104,557
	1964-65	63,792	193,626	-	-	-	-	-	-	-	117,827
	1965-66	65,245	198,039	-	-	-	-	-	-	-	120,513
	1966-67	82,271	249,718	-	-	-	-	-	-	-	151,960
Elgin	1960-61	138,280	-	40,760	185,897	1,143	-	-	-	1,143	13,713
	1961-62	113,164	-	33,357	152,132	935	-	-	-	935	11,223
	1962-63	126,310	-	37,232	169,806	1,044	-	-	-	1,044	12,528
	1963-64	159,781	-	47,098	214,802	1,320	-	-	-	1,320	15,846
	1964-65	195,785	-	57,711	263,204	1,618	-	-	-	1,618	19,417
	1965-66	227,057	-	66,929	305,244	1,876	-	-	-	1,876	22,519
	1966-67	201,902	-	59,514	271,428	1,669	-	-	-	1,669	20,023
Minto	1960-61	-	41,842	88,959	-	-	-	-	-	-	220,816
	1961-62	-	34,654	73,676	-	-	-	-	-	-	182,878
	1962-63	-	44,687	95,006	-	-	-	-	-	-	235,827
	1963-64	-	42,381	90,104	-	-	-	-	-	-	223,657
	1964-65	-	48,918	104,002	-	-	-	-	-	-	258,157
	1965-66	-	56,567	120,264	-	-	-	-	-	-	298,522
	1966-67	-	57,678	122,627	-	-	-	-	-	-	304,387
Lyleton	1960-61	-	-	-	-	-	28,860	261,483	1,166	-	37,606
	1961-62	-	-	-	-	-	8,784	68,142	355	-	11,446
	1962-63	-	-	-	-	-	62,733	486,658	2,535	-	81,743
	1963-64	-	-	-	-	-	46,881	363,687	1,894	-	61,088
	1964-65	-	-	-	-	-	44,368	344,188	1,793	-	57,813
	1965-66	-	-	-	-	-	55,206	428,263	2,230	-	71,935
	1966-67	-	-	-	-	-	51,712	401,154	2,089	-	67,381

(continued)

TABLE 30. - PROBABLE ADDITIONAL THROUGH-PUT AT ALTERNATIVE<sup>1</sup> DELIVERY POINTS IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED, 1960-61 TO 1966-67 (continued)

Specified Points	Alternative Delivery Points													
	Souris	Carroll	Nesbitt	Menteith	Hartney	Lauder	bushels							
							Gainsborough	Pierson	Melita	Leighton	Deloraine	Boissevain	Waskada	
Coulter	1960-61	-	-	-	-	-	-	-	17,597	-	-	-	-	66,599
	1961-62	-	-	-	-	-	-	-	4,618	-	-	-	-	17,480
	1962-63	-	-	-	-	-	-	-	47,437	-	-	-	-	179,533
	1963-64	-	-	-	-	-	-	-	28,981	-	-	-	-	109,686
	1964-65	-	-	-	-	-	-	-	28,789	-	-	-	-	108,957
	1965-66	-	-	-	-	-	-	-	30,451	-	-	-	-	115,248
	1966-67	-	-	-	-	-	-	-	29,274	-	-	-	-	110,795
Dalny	1960-61	-	-	-	-	-	-	-	1,109	-	-	-	-	183,744
	1961-62	-	-	-	-	-	-	-	701	-	-	-	-	116,095
	1962-63	-	-	-	-	-	-	-	1,982	-	-	-	-	328,303
	1963-64	-	-	-	-	-	-	-	1,566	-	-	-	-	259,467
	1964-65	-	-	-	-	-	-	-	1,366	-	-	-	-	226,319
	1965-66	-	-	-	-	-	-	-	1,620	-	-	-	-	268,457
	1966-67	-	-	-	-	-	-	-	1,577	-	-	-	-	261,270
All Twelve Points	1960-61	191,418	203,130	88,959	40,760	290,362	32,605	28,860	261,483	47,469	21,806	207,735	499,253	287,949
	1961-62	153,700	157,692	73,676	33,357	223,689	20,912	8,784	76,064	11,529	13,845	162,136	405,105	145,021
	1962-63	173,082	186,652	95,006	37,232	331,308	55,591	62,733	570,931	115,295	37,805	323,490	562,141	589,579
	1963-64	216,388	214,201	90,104	47,098	334,928	34,171	46,881	409,464	66,303	22,768	245,180	503,874	430,241
	1964-65	259,577	242,544	104,002	57,711	406,052	41,961	44,368	393,070	68,109	27,961	281,141	577,765	393,089
	1965-66	292,302	254,606	120,264	66,929	406,644	41,444	55,206	486,684	77,517	27,424	303,703	635,947	455,640
	1966-67	284,173	307,396	122,627	59,514	339,268	44,178	51,712	452,062	70,599	29,462	271,924	648,091	439,446

<sup>1</sup>Nearest delivery point to farm, via good roads; all else assumed unchanged

TABLE 31. - PROBABLE ADDITIONAL THROUGH-PUT AT ALTERNATIVE 1 DELIVERY POINTS IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED, 1960-61 TO 1966-67

Specified Points	Souris	Carroll	Nesbitt	Men- teith	Hartney	Lauder	Gains- borough	Pierson	Melita	Leighton	De- loraine	Boisse- vain	Sinclair	Linklater	Reston	Pipe- stone	Napinka	Medora
Dand	-	-	-	-	27,828	31,462	-	-	-	21,806	22,740	-	-	-	-	-	-	-
1960-61	-	-	-	-	17,669	19,977	-	-	-	13,845	14,439	-	-	-	-	-	-	-
1961-62	-	-	-	-	48,246	54,547	-	-	-	37,805	39,424	-	-	-	-	-	-	-
1962-63	-	-	-	-	29,056	32,851	-	-	-	22,768	23,743	-	-	-	-	-	-	-
1963-64	-	-	-	-	35,682	40,343	-	-	-	27,961	29,160	-	-	-	-	-	-	-
1964-65	-	-	-	-	34,998	39,568	-	-	-	27,424	28,599	-	-	-	-	-	-	-
1965-66	-	-	-	-	37,599	42,509	-	-	-	29,462	30,724	-	-	-	-	-	-	-
1966-67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hathaway	-	-	-	-	23,486	-	-	-	-	-	59,502	-	-	-	-	-	-	-
1960-61	-	-	-	-	18,764	-	-	-	-	-	47,538	-	-	-	-	-	-	-
1961-62	-	-	-	-	40,811	-	-	-	-	-	103,397	-	-	-	-	-	-	-
1962-63	-	-	-	-	30,781	-	-	-	-	-	77,987	-	-	-	-	-	-	-
1963-64	-	-	-	-	33,968	-	-	-	-	-	86,060	-	-	-	-	-	-	-
1964-65	-	-	-	-	38,999	-	-	-	-	-	98,808	-	-	-	-	-	-	-
1965-66	-	-	-	-	30,241	-	-	-	-	-	76,618	-	-	-	-	-	-	-
1966-67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Regent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960-61	-	-	-	-	-	-	-	-	-	-	124,350	52,284	-	-	-	-	-	-
1961-62	-	-	-	-	-	-	-	-	-	-	99,224	41,719	-	-	-	-	-	-
1962-63	-	-	-	-	-	-	-	-	-	-	179,625	75,524	-	-	-	-	-	-
1963-64	-	-	-	-	-	-	-	-	-	-	142,130	59,759	-	-	-	-	-	-
1964-65	-	-	-	-	-	-	-	-	-	-	164,303	69,082	-	-	-	-	-	-
1965-66	-	-	-	-	-	-	-	-	-	-	174,420	73,335	-	-	-	-	-	-
1966-67	-	-	-	-	-	-	-	-	-	-	162,913	68,498	-	-	-	-	-	-
Croll	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960-61	-	-	-	-	-	-	-	-	-	-	-	114,292	-	-	-	-	-	-
1961-62	-	-	-	-	-	-	-	-	-	-	-	94,414	-	-	-	-	-	-
1962-63	-	-	-	-	-	-	-	-	-	-	-	151,872	-	-	-	-	-	-
1963-64	-	-	-	-	-	-	-	-	-	-	-	100,055	-	-	-	-	-	-
1964-65	-	-	-	-	-	-	-	-	-	-	-	113,382	-	-	-	-	-	-
1965-66	-	-	-	-	-	-	-	-	-	-	-	121,058	-	-	-	-	-	-
1966-67	-	-	-	-	-	-	-	-	-	-	-	103,223	-	-	-	-	-	-
Elva	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960-61	-	-	-	-	-	-	-	37,597	27,597	-	-	-	-	-	-	-	-	-
1961-62	-	-	-	-	-	-	-	7,922	5,855	-	-	-	-	-	-	-	-	-
1962-63	-	-	-	-	-	-	-	84,273	62,341	-	-	-	-	-	-	-	-	-
1963-64	-	-	-	-	-	-	-	45,775	33,862	-	-	-	-	-	-	-	-	-
1964-65	-	-	-	-	-	-	-	48,882	36,161	-	-	-	-	-	-	-	-	-
1965-66	-	-	-	-	-	-	-	58,421	43,216	-	-	-	-	-	-	-	-	-
1966-67	-	-	-	-	-	-	-	50,908	37,659	-	-	-	-	-	-	-	-	-

(continued)

TABLE 31. - PROBABLE ADDITIONAL THROUGH PUT AT ALTERNATIVE 1 DELIVERY POINTS IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED, 1960-61 TO 1966-67 (continued)

Specified Points	Souris	Carroll	Ne-shirt	Men-teith	Hartney	Lauder	Gains-borough	Pierson	Melita	Leighton	De-loraine	Boisse-vain	Sinclair	Linklater	Reston	Pipe-stone	Nap nka	Medora
Underhill																		
1960-61	-	-	-	-	53,151	-	-	-	-	-	-	-	-	-	-	-	-	-
1961-62	-	-	-	-	35,124	-	-	-	-	-	-	-	-	-	-	-	-	-
1962-63	-	-	-	-	72,445	-	-	-	-	-	-	-	-	-	-	-	-	-
1963-64	-	-	-	-	60,289	-	-	-	-	-	-	-	-	-	-	-	-	-
1964-65	-	-	-	-	73,198	-	-	-	-	-	-	-	-	-	-	-	-	-
1965-66	-	-	-	-	27,403	-	-	-	-	-	-	-	-	-	-	-	-	-
1966-67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fairfax																		
1960-61	53,138	161,288	-	-	-	-	-	-	-	-	-	98,148	-	-	-	-	-	-
1961-62	40,536	123,038	-	-	-	-	-	-	-	-	-	74,871	-	-	-	-	-	-
1962-63	46,772	141,965	-	-	-	-	-	-	-	-	-	86,390	-	-	-	-	-	-
1963-64	56,607	171,820	-	-	-	-	-	-	-	-	-	104,557	-	-	-	-	-	-
1964-65	63,792	193,626	-	-	-	-	-	-	-	-	-	117,827	-	-	-	-	-	-
1965-66	65,245	198,039	-	-	-	-	-	-	-	-	-	120,513	-	-	-	-	-	-
1966-67	82,271	249,718	-	-	-	-	-	-	-	-	-	151,960	-	-	-	-	-	-
Elgin																		
1960-61	138,280	-	-	40,760	185,897	1,143	-	-	-	-	1,143	13,713	-	-	-	-	-	-
1961-62	113,164	-	-	33,357	152,132	935	-	-	-	-	935	11,223	-	-	-	-	-	-
1962-63	126,310	-	-	37,232	169,806	1,044	-	-	-	-	1,044	12,538	-	-	-	-	-	-
1963-64	159,781	-	-	47,098	214,802	1,320	-	-	-	-	1,320	15,846	-	-	-	-	-	-
1964-65	195,785	-	-	57,711	263,204	1,618	-	-	-	-	1,618	19,417	-	-	-	-	-	-
1965-66	227,057	-	-	66,929	305,244	1,876	-	-	-	-	1,876	22,519	-	-	-	-	-	-
1966-67	201,902	-	-	57,514	271,428	1,669	-	-	-	-	1,669	20,023	-	-	-	-	-	-
Minto																		
1960-61	-	41,842	88,959	-	-	-	-	-	-	-	-	220,816	-	-	-	-	-	-
1961-62	-	34,654	73,676	-	-	-	-	-	-	-	-	182,878	-	-	-	-	-	-
1962-63	-	44,687	95,006	-	-	-	-	-	-	-	-	235,827	-	-	-	-	-	-
1963-64	-	42,381	90,104	-	-	-	-	-	-	-	-	223,657	-	-	-	-	-	-
1964-65	-	48,918	104,002	-	-	-	-	-	-	-	-	258,157	-	-	-	-	-	-
1965-66	-	56,567	120,264	-	-	-	-	-	-	-	-	298,522	-	-	-	-	-	-
1966-67	-	57,578	122,627	-	-	-	-	-	-	-	-	304,387	-	-	-	-	-	-
Lyleton																		
1960-61	-	-	-	-	-	-	28,860	254,495	8,163	-	-	-	-	-	-	-	-	-
1961-62	-	-	-	-	-	-	8,784	77,459	2,484	-	-	-	-	-	-	-	-	-
1962-63	-	-	-	-	-	-	62,733	553,193	17,743	-	-	-	-	-	-	-	-	-
1963-64	-	-	-	-	-	-	46,881	413,410	13,259	-	-	-	-	-	-	-	-	-
1964-65	-	-	-	-	-	-	44,368	391,245	12,549	-	-	-	-	-	-	-	-	-
1965-66	-	-	-	-	-	-	55,206	486,814	15,614	-	-	-	-	-	-	-	-	-
1966-67	-	-	-	-	-	-	51,712	455,999	14,625	-	-	-	-	-	-	-	-	-

(continued)

TABLE 31. —PROBABLE ADDITIONAL THROUGH PUT AT ALTERNATIVE 1 DELIVERY POINTS IF SPECIFIED DELIVERY HAD BEEN CLOSED, 1960-61 TO 1966-67 (continued)

Specified Points	Souris	Carroll	Nesbitt	Men tooth	Hartney	Louder	Gann. borough	Pierson	Melita	Leighton	De lorraine	Boisse vain	Sinclair	Linklater	Reston	Pipe-stone	Napinka	Medora
Coulter																		
1960-61									84,196									
1961-62									22,098									
1962-63									226,970									
1963-64									138,667									
1964-65									137,746									
1965-66									145,699									
1966-67									140,069									
Dalry																		
1960-61									184,853									
1961-62									116,796									
1962-63									330,285									
1963-64									261,033									
1964-65									227,685									
1965-66									270,077									
1966-67									262,847									
Tilston																		
1960-61								4,574	100,623				91,476	32,016				
1961-62								1,751	38,531				35,028	12,260				
1962-63								10,278	226,113				205,558	71,945				
1963-64								6,688	147,127				133,752	46,813				
1964-65								7,573	166,616				151,469	53,014				
1965-66								8,810	193,833				176,212	61,674				
1966-67								8,569	188,510				171,373	59,981				
Broomhill																		
1960-61									13,163				5,439	21,440	24,435	9,853	4,492	
1961-62									6,146				2,539	10,010	11,408	4,600	2,098	
1962-63									27,860				11,511	45,376	51,715	20,953	9,509	
1963-64									17,371				7,177	28,293	32,245	13,002	5,929	
1964-65									18,808				7,771	30,634	34,913	14,078	6,420	
1965-66									20,764				8,579	33,818	38,543	15,541	7,087	
1966-67									17,900				7,396	29,156	33,229	13,399	6,110	
Waskada																		
1960-61									60,930								22,948	311,772
1961-62									34,946								13,162	178,815
1962-63									90,095								33,932	461,008
1963-64									77,755								29,284	397,861
1964-65									69,885								26,320	357,592
1965-66									95,455								35,951	488,434
1966-67									89,028								33,530	455,547

(continued)



TABLE 31. - PROBABLE ADDITIONAL THROUGH-PUT AT ALTERNATIVE<sup>1</sup> DELIVERY POINTS IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED, 1960-61 TO 1966-67 (continued)

Specified Points	Souris	Carroll	Nesbitt	Men-teith	Hartney	Lauder	Gains-borough	Pierson	Melita	Leighton	De-loraine	Boisse-vain	Sinclair	Linklater	Reston	Pipe-stone	Napinka	Medora
Cranmer																		
1960-61	-	-	-	-	-	-	-	-	-	17,271	-	-	-	-	-	-	-	129,093
1961-62	-	-	-	-	-	-	-	-	-	9,467	-	-	-	-	-	-	-	70,766
1962-63	-	-	-	-	-	-	-	-	-	25,252	-	-	-	-	-	-	-	188,745
1963-64	-	-	-	-	-	-	-	-	-	16,583	-	-	-	-	-	-	-	123,950
1964-65	-	-	-	-	-	-	-	-	-	17,376	-	-	-	-	-	-	-	129,876
1965-66	-	-	-	-	-	-	-	-	-	14,285	-	-	-	-	-	-	-	106,773
1966-67	-	-	-	-	-	-	-	-	-	17,172	-	-	-	-	-	-	-	128,357
Goodlands																		
1960-61	-	-	-	-	-	-	-	-	1,585	161,958	104,274	-	-	-	-	-	-	49,126
1961-62	-	-	-	-	-	-	-	-	1,011	103,302	66,510	-	-	-	-	-	-	31,334
1962-63	-	-	-	-	-	-	-	-	2,759	282,019	181,575	-	-	-	-	-	-	85,544
1963-64	-	-	-	-	-	-	-	-	2,177	222,528	143,272	-	-	-	-	-	-	67,499
1964-65	-	-	-	-	-	-	-	-	2,125	217,167	139,820	-	-	-	-	-	-	65,873
1965-66	-	-	-	-	-	-	-	-	2,592	264,824	170,503	-	-	-	-	-	-	80,328
1966-67	-	-	-	-	-	-	-	-	2,591	264,782	170,476	-	-	-	-	-	-	80,315
All Seventeen Point	191,418	203,170	88,959	40,760	290,362	32,605	33,434	392,715	380,487	201,035	312,009	499,253	96,915	53,456	24,435	9,853	27,440	489,991
1960-61	153,700	157,692	73,675	33,357	223,689	20,912	10,535	123,912	189,336	126,614	228,646	405,105	37,567	22,270	11,408	4,600	15,260	280,915
1961-62	173,082	186,652	95,006	37,232	331,308	55,591	73,011	863,579	758,053	345,076	505,065	562,141	217,069	117,321	51,715	20,853	43,441	735,297
1962-63	216,388	214,201	90,104	47,098	334,928	34,171	53,569	606,312	544,124	261,879	388,452	503,874	140,929	75,106	32,245	13,002	35,213	589,310
1963-64	259,577	242,544	104,007	57,711	406,052	41,961	51,941	606,743	504,959	252,504	420,961	577,865	159,240	83,648	34,913	14,078	32,740	553,341
1964-65	292,302	254,606	120,264	66,929	406,644	41,444	64,016	739,068	593,417	306,533	474,206	635,947	184,791	95,492	38,543	15,541	43,038	675,535
1965-66	284,173	307,396	122,627	59,514	339,268	44,178	60,281	695,417	564,719	311,416	442,400	648,091	178,769	89,137	33,229	13,399	39,640	664,219
1966-67																		

<sup>1</sup>Nearest delivery point to farm, via good roads, all else assumed unchanged

TABLE 32. - RATIO OF GRAIN DELIVERIES TO STORAGE CAPACITY IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED, 1962-63 AND 1966-67

Delivery Point	1962-63 <sup>1</sup>	1966-67 <sup>1</sup>	1962-63 <sup>2</sup>	1966-67 <sup>2</sup>	1962-63 <sup>3</sup>	1966-67 <sup>3</sup>	1962-63 <sup>4</sup>	1966-67 <sup>4</sup>
Dand	3.13	2.46						
Hathaway	5.42	4.02						
Regent	2.89	2.62						
Croll	1.96	1.33						
Elva	3.13	1.88						
Underhill	2.12	-						
Fairfax	1.18	2.01	1.66	2.17				
Elgin	1.48	2.08	3.17	3.07				
Minto	1.39	1.64	1.44	1.67				
Lyleton	3.78	2.62	3.78	2.62				
Coulter	4.54	2.80	4.54	2.80				
Dalny	2.04	1.63	2.04	1.63				
Tilston	2.72	2.62	2.72	2.62	2.72	2.62		
Broomhill	6.95	4.47	6.95	4.47	6.95	4.47		
Waskada	3.00	2.11	3.00	2.11	6.02	3.71		
Cranmer	2.55	1.73	2.55	1.73	2.55	1.73		
Goodlands	2.25	2.13	2.25	2.13	2.25	2.13		
Pierson	4.42	2.39	4.86	2.56	8.30	4.33	10.15	5.41
Hartney	4.19	2.14	4.97	2.66	7.15	3.97	7.15	3.97
Lauder	2.48	2.29	2.89	2.61	3.34	3.01	3.83	3.47
Melita	3.04	2.51	3.27	2.64	3.46	2.74	5.83	4.39
Leighton	4.47	3.65	5.22	4.23	5.22	4.23	11.31	9.82
Deloraine	2.48	2.29	2.89	2.61	3.34	3.01	3.83	3.47
Boissevain	2.50	2.32	2.57	2.36	3.76	3.48	3.76	3.48
Napinka	2.38	1.80	2.38	1.80	2.38	1.80	2.74	2.12
Medora	3.60	2.15	3.60	2.15	3.60	2.15	7.63	4.31

<sup>1</sup>Ratios for actual handlings for all points for crop years 1962-63 and 1966-67.

<sup>2</sup>Ratios, after diversion of Dand, Hathaway, Regent, Croll, Underhill and Elva for crop years 1962-63 and 1966-67.

<sup>3</sup>Ratios after diversion of 2 plus Elgin, Fairfax, Minto, Lyleton, Coulter and Dalny for crop years 1962-63 and 1966-67.

<sup>4</sup>Ratios after diversion of 3 plus Waskada, Cranmer, Goodlands, Tilston and Broomhill for crop years 1962-63 and 1966-67.

TABLE 33A. - AVERAGE FARM-TO-ELEVATOR HAULING DISTANCES IN THE STUDY AREA 1962-63,  
AND ESTIMATED AVERAGE IF SPECIFIED ELEVATOR POINTS HAD BEEN CLOSED

Specified Points	Average Distance 1962-63	Average Distance (see foot-note 1)	Average Distance (see foot-note 2)	Average Distance (see foot-note 3)
	miles			
Dand	3.55	9.02	9.02	9.02
Additional Haul	-	5.47	5.47	5.47
Hathaway	3.39	11.54	12.19	12.19
Additional Haul	-	8.15	8.80	8.80
Regent	3.93	10.63	15.34	15.34
Additional Haul	-	6.70	11.41	11.41
Croll	3.67	9.55	12.62	12.62
Additional Haul	-	5.88	8.95	8.95
Underhill	3.43	7.61	9.55	9.55
Additional Haul	-	4.18	6.12	6.12
Elva	4.15	8.00	8.00	8.00
Additional Haul	-	3.85	3.85	3.85
Elgin	4.88	4.88	13.19	13.19
Additional Haul	-	-	8.31	8.31
Fairfax	4.63	4.63	13.69	13.69
Additional Haul	-	-	9.06	9.06
Minto	5.07	5.07	9.87	9.87
Additional Haul	-	-	4.80	4.80
Lyleton	6.67	6.67	13.44	13.81
Additional Haul	-	-	6.77	7.14
Coulter	4.03	4.03	12.47	16.04
Additional Haul	-	-	8.44	12.01
Dalny	5.05	5.05	8.34	18.32
Additional Haul	-	-	3.29	13.27
Tilston	5.32	5.32	5.32	12.52
Additional Haul	-	-	-	7.20
Broomhill	5.94	5.94	5.94	10.97
Additional Haul	-	-	-	5.03
Waskada	5.04	5.04	5.04	16.82
Additional Haul	-	-	-	11.78
Cranmer	4.46	4.46	4.46	13.09
Additional Haul	-	-	-	8.63
Goodlands	5.50	5.50	5.50	11.57
Additional Haul	-	-	-	6.07

1 - Assume Croll, Dand, Hathaway, Regent, Underhill and Elva closed

2 - Assume, in addition, Elgin, Fairfax, Minto, Lyleton, Coulter and Dalny closed.

3 - Assume, in addition, Waskada, Cranmer, Goodlands, Tilston and Broomhill closed.

TABLE 33B - AVERAGE FARM-TO-ELEVATOR HAULING DISTANCES, 1962-63, AND INCREASED SIZE OF HINTERLANDS OF DELIVERY POINTS BEING USED AS GRAIN DIVERSION POINTS.

Delivery Point	Average Distance 1962-63	Average Distance (see foot-note 1)	Average Distance (see foot-note 2)	Average Distance (see foot-note 3)
			miles	
Fairfax	4.63	5.17	—	—
Additional size		0.54	—	—
Minto	5.07	5.19	—	—
Additional size		0.12	—	—
Elgin	4.88	7.30	—	—
Additional size		2.42	—	—
Leighton	3.34	4.52	4.52	7.68
Additional size		1.18	1.18	4.34
Lauder	5.33	5.83	5.95	5.95
Additional size		0.50	0.62	0.62
Hartney	6.84	7.12	8.59	8.59
Additional size		0.28	1.75	1.75
Deloraine	7.61	8.12	9.22	9.55
Additional size		0.51	1.61	1.94
Boissevain	8.95	9.00	10.78	10.78
Additional size		0.05	1.83	1.83
Melita	7.45	7.48	7.73	11.09
Additional size		0.03	0.28	3.64
Pierson	5.94	6.23	8.92	10.06
Additional size		0.29	2.98	4.12
Waskada	5.04	5.04	8.77	—
Additional size		—	3.73	—
Souris	7.27	7.27	8.39	8.39
Additional size		—	1.12	1.12
Carroll	3.31	3.31	8.60	8.78
Additional size		—	5.29	5.47
Nesbitt	5.65	5.65	7.31	7.31
Additional size		—	1.66	1.66
Menteith	4.28	4.28	5.47	5.47
Additional size		—	1.19	1.19
Gainsborough	7.48	7.48	7.85	7.97
Additional size		—	0.37	0.49
Medora	5.74	5.74	5.74	10.35
Additional size		—	—	4.61
Napinka	5.80	5.80	5.80	6.11
Additional size		—	—	0.31
Sinclair	5.04	5.04	5.04	7.75
Additional size		—	—	2.71
Linklater	4.67	4.67	4.67	7.25
Additional size		—	—	2.58
Reston	6.26	6.26	6.26	6.75
Additional size		—	—	0.49
Pipestone	6.82	6.82	6.82	6.98
Additional size		—	—	0.16

1 - Assume Croll, Dand, Hathaway, Regent, Underhill and Elva closed.

2 - Assume, in addition, Elgin, Fairfax, Minto, Lyleton, Coulter and Dalny closed.

3 - Assume, in addition, Waskada, Cranmer, Goodlands, Tilston and Broomhill closed.





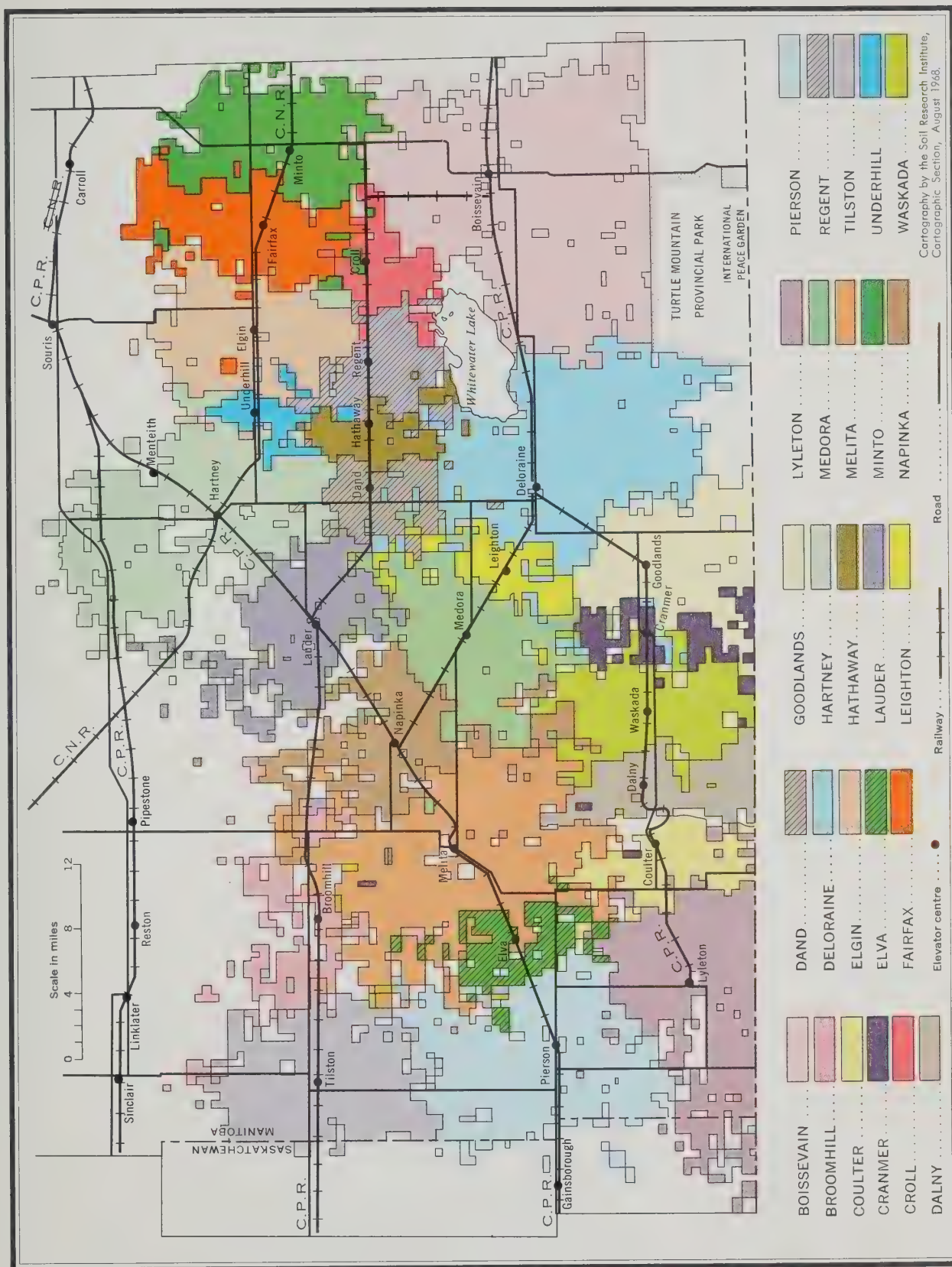


Figure 1. Grain farms in relation to their respective delivery points. Boissegvain Region, southwestern Manitoba, 1962-63.









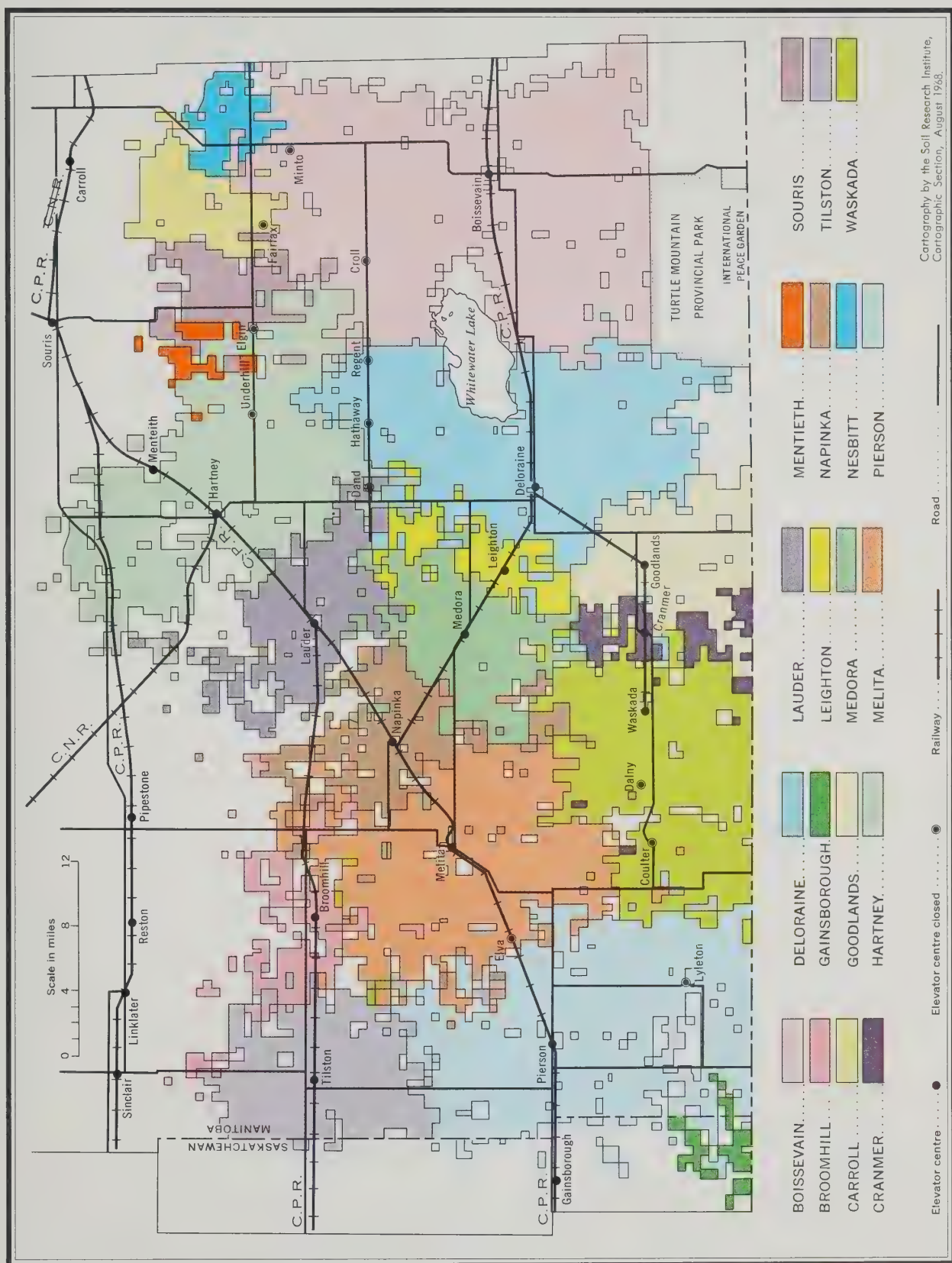


Figure 3. Grain farms and their probable delivery points had the elevators specified in Table 30 been closed in 1962-63.





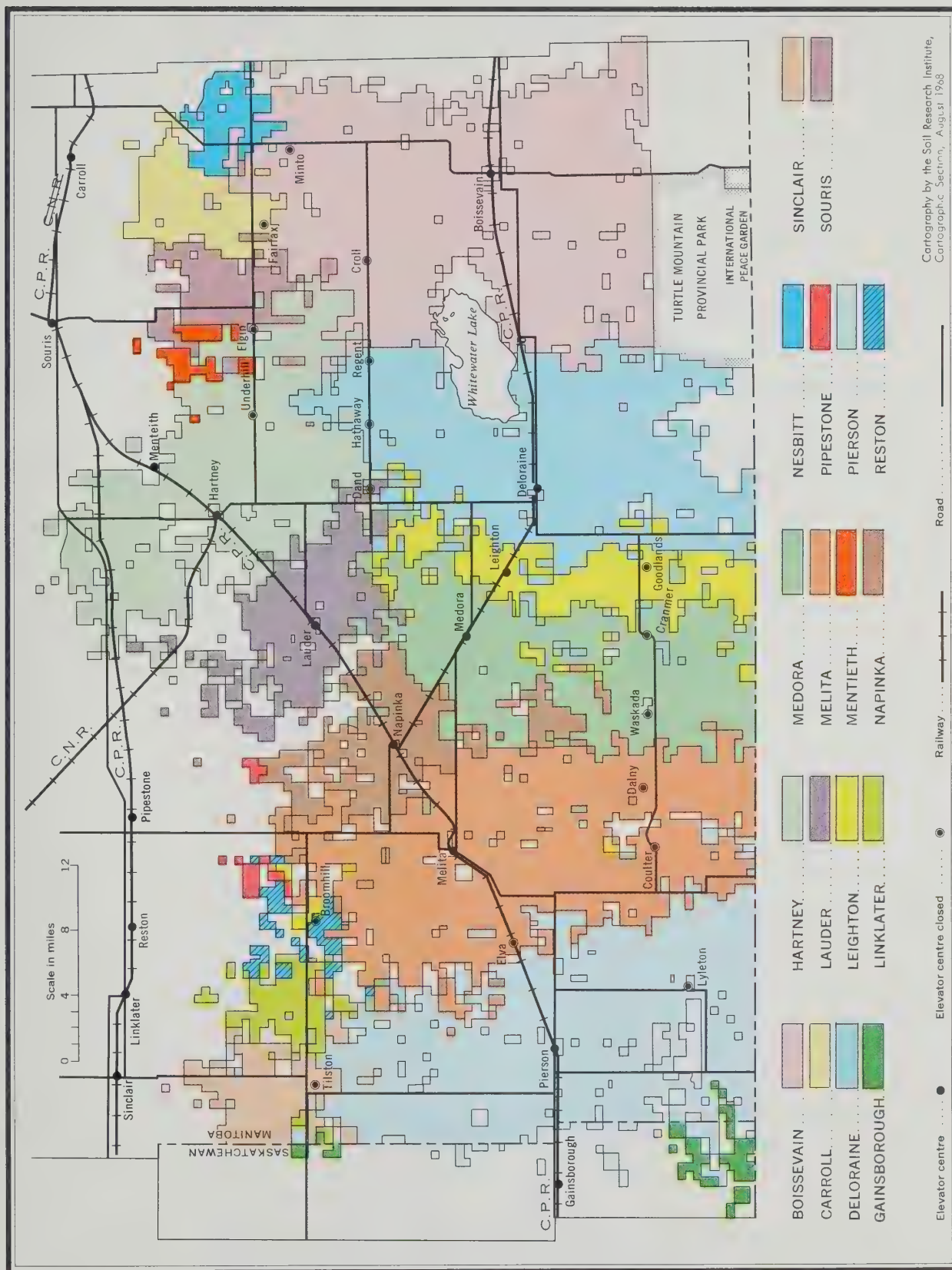


Figure 4. Grain farms and their probable delivery points had the elevators specified in Table 31 been closed in 1962-63.



## APPENDIX 1

The following service activities were present in the communities of the area:

### Hamlets

Cranmer	2 elevators
Elva	post office, primary school
Hathaway	curling rink and 1 elevator
Underhill	general store, service station, private elevator
Broomhill	grocery store, curling rink, primary school and 1 elevator
Dand	general store, automobile repair shop, post office, primary school, church, and 1 elevator
Coulter	general store, service station, skating rink, post office, primary school, church, customs office, 1 elevator
Regent	general store, service station, curling rink, post office, primary school (dissolved 1967), church, community hall and 1 elevator

### Villages

Fairfax	general store, curling rink, billiard room, service station, municipal equipment maintenance yard, post office, church, 3 elevators, bulk fuel storage
Medora	general store, drilling contractor, skating rink, post office, implement dealer, auto dealer, primary school, 2 elevators, bulk fuel storage, railway station.
Lyleton	grocery store, restaurant, auto repair, skating rink, billiard room, service station, post office, primary school, church, community hall, 2 elevators, lumber yard, telephone exchange, railway station, and customs office
Goodlands	general store, hardware, auto repairs (3), blacksmith, curling rink, hockey arena, service station, post office, primary school, church, library, 3 elevators, bulk fuel depot, building material dealer, railway station
Lauder	grocery store, general store, blacksmith, auto repairs (3), curling rink, hockey arena, service stations (3), post office, primary school, church, community hall, 2 elevators, bulk fuel depot, railway station
Tilston	confectionery, restaurant, general store, machinery dealer, fertilizer dealer, auto repair shops (2), curling rink, hockey arena, service stations (2), post office, town hall, primary school, churches (2), 3 elevators, bulk fuel storage, railway station.





- Napinka      cafe, general store and hardware, implement dealer, machine shop, welding shops (2), garages (2), electrician, curling rink, skating rink, service stations (2), post office, primary school, churches (3), community hall, 2 elevators, village office, railway station
- Minto        grocery store, butcher shop, beer parlour, restaurant, saddlery, farm supplies dealer, barber shop, bank, blacksmith, welding shop, hockey arena, curling rink, motel, service station, post office, municipal office, primary school, churches (2), community halls (3), 3 elevators, bulk fuel storage, telephone exchange, truck terminal
- Elgin        super market, restaurant, clothing store, machinery dealers (2), barber, bank, auto repair shop, welding shop, hockey arena, curling rink, service stations (3), auto dealer, post office, primary school, churches (2), community hall, fire station, 3 elevators, coal dealer, bulk fuel depot, lumber yard, telephone exchange, truck terminal, railway station

#### Towns

- Pierson      restaurants (2), stores (4), implement dealers (2), fertilizer dealers (3), bank, insurance agents (2), blacksmith, garages (3), skating rink, curling rink, municipal office, post office, primary school, high school, churches (2), community hall, 3 elevators, bulk fuel dealers (3), hydro office, lumber yard, bus depot, railway station
- Waskada     super market, butcher shop, restaurant, general store, drug store, machinery dealers (2), farm supplies dealer, fertilizer dealer, doctor, bank, insurance office, auto repair shops (4), hockey arena, curling rink, cinema, golf course, service stations (4), auto dealer, post office, town hall, primary school, high school, church, community hall, police station, fire station, 3 elevators, bulk fuel depots (3), railway station

#### Greater Towns

- Hartney     bakery, liquor store, confectionery, super markets (2), restaurant, appliances store, clothing and shoe store, department store, drug store, paint and wall paper store, hardware, machinery dealers (6), farm supplies dealer, barber shop, doctor, bank, credit union, insurance agent, real estate, plumbing and heating, auto repair shops (4), cinema, golf course, curling rink, hockey arenas (2), hotel, service stations (7), auto dealers (3), town hall, post office, municipal office, hospital, primary schools (2), high school, churches (3), community halls (2), police station, 3 elevators, cold storage and locker, gas and oil depot (4), pumping station, lumber dealer, telephone exchange, railway station (2), private airport

- Deloraine grocery store, bakery, butcher, liquor store, super markets (2), restaurants (4), beer parlor, clothing stores (3), T.V. and radio sales, dry goods store, drug stores (2), department store, appliance store, hardware stores (3), paint and wall paper store, jewelry store, florist, fertilizer sales (2), machinery dealers (5), barber shops (2), beauty parlor, doctors (3), accountant, lawyer, consultant, printing and publishing, credit union, bank, insurance agent, auto repair shops (9), T.V. and radio repair (2), plumbing and heating, building contractor, pool room, race track, hockey arena, curling rink, hotel, auto dealer, service stations (8), post office, municipal office, clinic, home for the aged, general hospital, primary schools (2), high school, community halls (2), churches (3), fire station, R.C.M.P. detachment, municipal police station, 4 elevators, cold storage and locker, coal dealer, bulk fuel depots (6), building material, transformer station, municipal wells, telephone exchange, railway station, bus terminal, truck terminal
- Melita liquor store, grocery stores (4), meat markets (3), egg grading station, hatchery, bakery, restaurants (8), beverage rooms (3), electrical appliances stores (4), furniture store, clothing stores (8), shoe stores (2), general store, drug store, hardwares (3), jewelry store, implement dealers (4), barber shops (2), beauty parlors (3), dry cleaners, laundry, shoe repair, agricultural representative, chiropractor, dentist, doctors (2), lawyers (2), optometrists (2), veterinarian, funeral parlour, photographer, accountant, local newspaper, bank, plumbing and heating, upholsterers, painters and decorators (2), electrical contractors (2), T.V. and radio repairs (4), building contractors (5), auto repair shop, woodworking shop, golf course, playground, skating rink, curling rink, bowling alley, theatre, hotels (2), motels (2), service stations (6), auto dealers (4), post office, municipal office, hospital, high school, primary school, churches (5), community hall, library, fire station, R.C.M.P. detachment, 3 elevators, locker plant, bulk oil dealers (4), lumber yards (2), telephone exchange, television rebroadcasting station, C.P.R. express, private airport, truck terminal, bus terminal, railway station.
- Boissevain bakery, grocery store, meat market, super market, dairies (2), egg grading station, restaurants (7), beverage rooms (2), home furnishings store, appliances dealer, furniture store, clothing store, shoe store, sporting goods store, liquor vendor, departmental stores (2), drug store, hardware stores (3), paint centre, jewelry store, florist, feed mill, implement dealers (4), barber shops (2), beauty parlours (3), dry cleaner, laundry, shoe repair, agricultural representative, dentist, doctors (3), lawyers (2), veterinarian, funeral parlour, bank, credit union, real estate agencies (2), insurance companies (2), Westview Lodge, newspaper, accountants (2), auctioneer, wood working shop, building contractors (2), electrical contractors (3), T.V. and radio repair shop,

Boissevain machine shops (2), painter and decorator, plumbing and heating (2), road contractor, park, swimming pool, baseball park, rifle range, golf course, pool room, curling rink, skating rink, dance hall, theater, hotels (3), motel, service stations (6), auto dealers (4), municipal office, D.P.W. garage and office, land title office, post office, hospital, medical clinic, elementary schools (3), high school, school for retarded children, churches (6), R.C.M.P. detachment, fire station, library, 5 elevators, locker plant, bulk oil dealer (4), fuel dealer (3), lumber yard (2), Manitoba hydro office, water reservoir, telephone exchange, radio station, T.V. relay station, private landing field, railway station, truck terminal, bus terminal.

Those service establishments providing employment in the larger communities have traditionally been the local bakery, newspaper, hospital or telephone exchange. This is still largely true today. However, such jobs are few in number and tend to be reserved for people in the immediate community. Strong secondary industry has been slow to emerge in an economy where agriculture is the dominant activity. The only major manufacturing industry in the study area capable of providing jobs for urban and rural populations is Dring Laminated Structures Limited of Boissevain. This company manufactures laminated arches and beams, plywood panel sections, and other wood products for the construction industry. It also maintains its own specially outfitted fleet of trucks to carry its beams, some of which are 150 feet in length. Currently up to 80 employees work in the company's three plant buildings, making the Dring company the towns' largest employer. About a third of these jobs are seasonal in nature. This allows the company to take advantage of the seasonal availability of labour in the farm population.

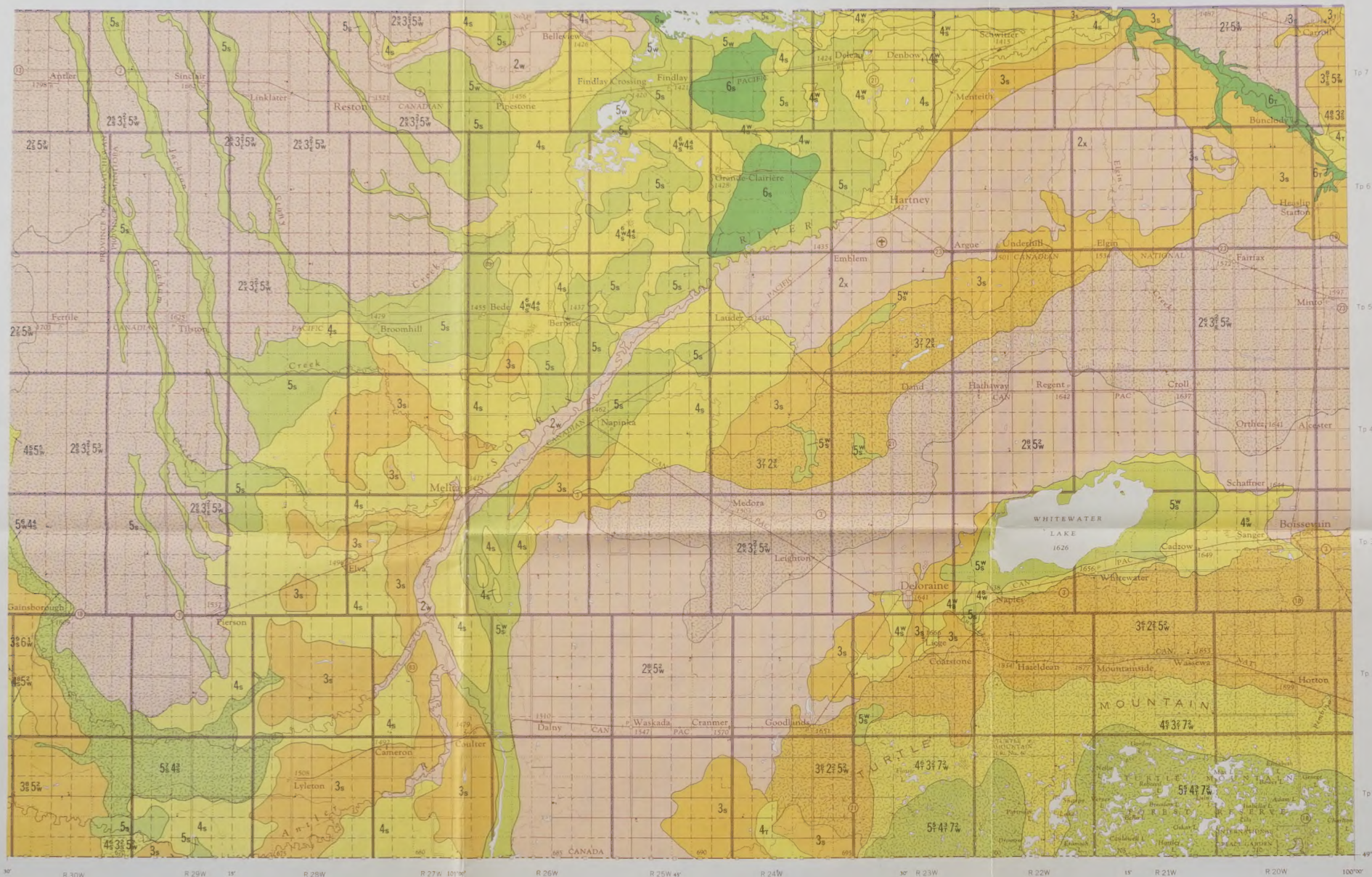








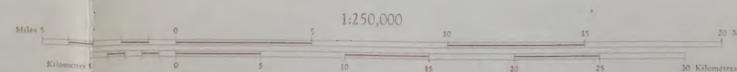




Capability classification by the Manitoba and Saskatchewan Soil Survey with the support of ARDA, Canada Department of Forestry and Rural Development.

Cartography by the Soil Research Institute, Research Branch, Canada Department of Agriculture with the support of ARDA, Canada Department of Forestry and Rural Development. Base map and printing by the Survey and Mapping Branch, Department of Energy, Mines and Resources, Ottawa, 1968.

## SOIL CAPABILITY FOR AGRICULTURE IN THE BISSEVAIN GRAIN GROWING REGION OF SOUTHWESTERN MANITOBA



### DESCRIPTIVE LEGEND

In this classification the mineral soils are grouped into seven classes on the basis of soil survey information. Soils in classes 1, 2, 3 and 4 are considered capable of sustained use for cultivated field crops, those in classes 5 and 6 only for perennial forage crops and those in class 7 for neither.

Some of the important factors on which the classification is based are:

- The soils will be well managed and cropped, under a largely mechanized system.
- Land requiring improvements, including clearing, that can be made economically by the farmer himself, is classed according to its limitations or hazards in use after the improvements have been made. Land requiring improvements beyond the means of the farmer himself is classed according to its present condition.
- The following are not considered: distances to market, kind of roads, location, size of farms, type of ownership, cultural patterns, skill or resources of individual operators, and hazard of crop damage by storms.

The classification does not include capability of soils for trees, tree fruits, small fruits, ornamental plants, recreation, or wildlife.

The classes are based on intensity, rather than kind, of their limitations for agriculture. Each class includes many kinds of soil, and many of the soils in a class require unlike management and treatment.

**CLASS 1** SOILS IN THIS CLASS HAVE NO SIGNIFICANT LIMITATIONS IN USE FOR CROPS.

The soils are deep, are well to perfectly drained, hold moisture well, and in the virgin state were well supplied with plant nutrients. They can be managed and cropped without difficulty. Under good management they are moderately high to high in productivity for a wide range of field crops.

**CLASS 2** SOILS IN THIS CLASS HAVE MODERATE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE MODERATE CONSERVATION PRACTICES.

The soils are deep and hold moisture well. The limitations are moderate and the soils can be managed and cropped with little difficulty. Under good management they are moderately high to high in productivity for a fairly wide range of crops.

**CLASS 3** SOILS IN THIS CLASS HAVE MODERATELY SEVERE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE SPECIAL CONSERVATION PRACTICES.

The limitations are more severe than for Class 2 soils. They affect one or more of the following practices: timing and ease of tillage; planting and harvesting; choice of crops; and methods of conservation. Under good management they are fair to moderately high in productivity for a fair range of crops.

**CLASS 4** SOILS IN THIS CLASS HAVE SEVERE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE SPECIAL CONSERVATION PRACTICES, OR BOTH.

The limitations seriously affect one or more of the following practices: timing and ease of tillage; planting and harvesting; choice of crops; and methods of conservation. The soils are low to fair in productivity for a fair range of crops but may have high productivity for a specially adapted crop.

**CLASS 5** SOILS IN THIS CLASS HAVE VERY SEVERE LIMITATIONS THAT RESTRICT THEIR CAPABILITY TO PRODUCING PERENNIAL FORAGE CROPS, AND IMPROVEMENT PRACTICES ARE FEASIBLE.

The limitations are so severe that the soils are not capable of use for sustained production of annual field crops. The soils are capable of producing native or tame species of perennial forage plants, and may be improved by use of farm machinery. The improvement practices may include clearing of bush, cultivation, seeding, fertilizing, or water control.

**CLASS 6** SOILS IN THIS CLASS ARE CAPABLE ONLY OF PRODUCING PERENNIAL FORAGE CROPS, AND IMPROVEMENT PRACTICES ARE NOT FEASIBLE.

The soils provide some sustained grazing for farm animals, but the limitations are so severe that improvement by use of farm machinery is impractical. The terrain may be unsuitable for use of farm machinery, or the soils may not respond to improvement, or the grazing season may be very short.

**CLASS 7** SOILS IN THIS CLASS HAVE NO CAPABILITY FOR ARABLE CULTURE OR PERMANENT PASTURE.

This class also includes rockland, other non-soil areas, and bodies of water too small to show on the maps.

**0** ORGANIC SOILS (Not placed in capability classes).

### SUBCLASSES

Excepting Class 1, the classes are divided into subclasses on the basis of kinds of limitation. The subclasses are as follows:

• **SUBCLASS C:** adverse climate — The main limitation is low temperature or low or poor distribution of rainfall during the cropping season, or a combination of these.

• **SUBCLASS E:** erosion damage — Past damage from erosion limits agricultural use of the land.

• **SUBCLASS I:** inundation — Flooding by streams or lakes limits agricultural use.

• **SUBCLASS P:** stoniness — Stones interfere with tillage, planting, and harvesting.

• **SUBCLASS R:** shallowness to solid bedrock — Solid bedrock is less than three feet from the surface.

• **SUBCLASS S:** soil limitations — Limitations include one or more of the following undesirable structure, low permeability, a restricted rooting zone because of soil characteristics, low natural fertility, low moisture-holding capacity, salinity.

• **SUBCLASS T:** adverse topography — Either steepness or the pattern of slopes limits agricultural use.

• **SUBCLASS W:** excess water — Excess water other than from flooding limits use for agriculture. The excess water may be due to poor drainage, a high water table, seepage or runoff from surrounding areas.

• **SUBCLASS X:** Soils having a moderate limitation caused by the cumulative effect of two or more adverse characteristics which singly are not serious enough to affect the class rating.

### CONVENTIONS

Large arabic numerals denote capability classes. Small arabic numerals placed after a class numeral give the approximate proportion of the class out of a total of 10. Letters placed after class numerals denote the subclasses, i.e. limitations.

\* Denotes class or subclass not present on this map.

### EXAMPLES

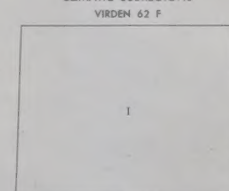
An area of Class 4 land with topography and stoniness limitations is shown thus: 4P

An area of Class 2 with topographic limitation, and Class 4 with stoniness limitation, in the proportions of 7:3 is shown thus: 274P

N.B. The color used for a complex area is determined by the first digit of the symbol. Generally the dominant class appears first in a complex symbol. However, in complexes of two arable classes (1-4) and one non arable class (5-7), the arable classes are shown first if they total one half or more of the map unit.

This pattern is overprinted on the color in complex areas, except those having ratios of 8:2, 8:1:1 and 9:1.

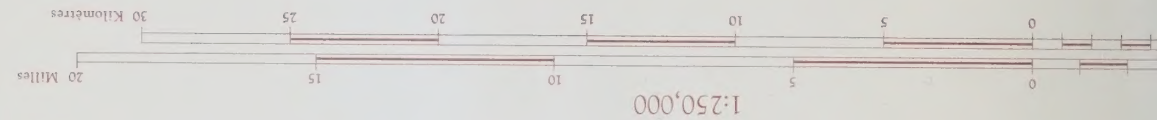
### CLIMATIC SUBREGIONS



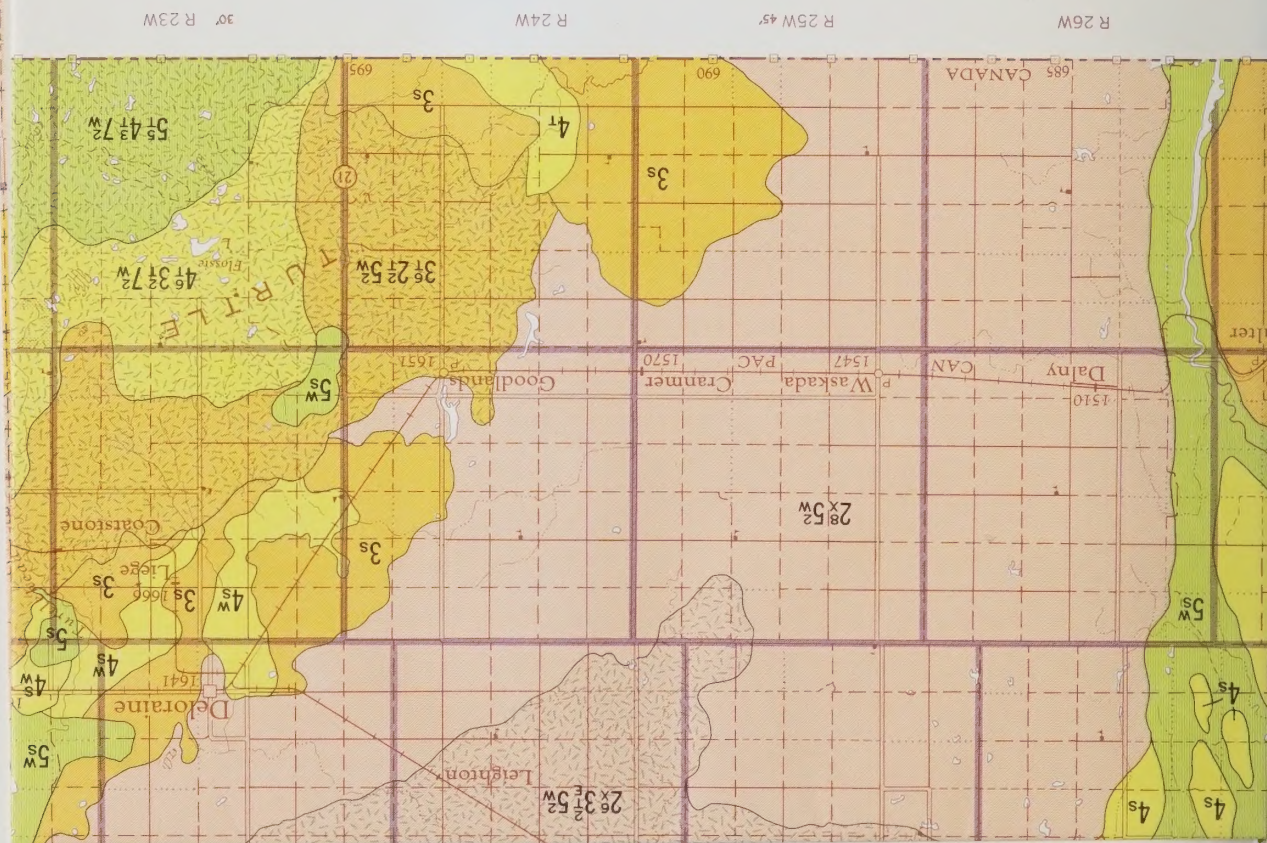
Subregion	Limitation
I	None
II	Moderate
III	Moderately severe
IV	Severe
V	Very severe

VIRDEN - 62F





# OIL CAPABILITY FOR AGRICULTURE E BOISSEVAIN GRAIN GROWING REGION OF SOUTHWESTERN MANITOBA



1 map

